British Columbia Building Code

Change Process

Change Proposals for the1990 B.C. Building Code

February 1991

Please retain this document for future reference during the process as it will not be re-issued at a later date.

Building Standards Branch
Ministry of Municipal Affairs, Recreation and Culture
The Honourable Lyall Hanson, Minister

BC
B88
D:B772
1991
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1990 B.C. Building Code Change Proposals

General:

The following is a list of Code change proposals included in the review process. They are listed in National Building Code (N.B.C.) Code order and presented "as submitted" with only minor editorial changes where needed for clarity. In many cases reference is made to substantiating documentation which is not reproduced in its entirety due to space limitations. The full documentation will be used by both the Code Advisory Committee and the Voting Group during their deliberations and is available for viewing by other interested parties on request.

These proposals have been subjected to a preliminary review by Branch Staff which has resulted in withdrawal or modification of a few proposals by the proponents, only the modified version is shown in this document. Due to the high level of compliance with process instructions and excellent co-operation of the various proponents, the work involved in this review process was much less than anticipated, Branch Staff greatly appreciate this co-operation.

Method of Presentation:

1990 National Building Code reference numbers and methods of presentation have been used where possible and unless indicated by "(B.C.B.C.)", this includes proposals originally submitted using the old B.C.B.C. numbering system and format.

Names of the proponents have deliberately not been included since each submission should be considered on its own merit, irrespective of source.

Actions required are indicated in bold type and underlined e.g. **Delete**, **Amend**, etc.

Within the actual changes, **deletions are indicated in bold type,** additional wording is indicated by underlining of new text.

We have tried to indicate related proposals, i.e. proposals which are either similar in nature or part of a package which should be considered together.

The Next Stage:

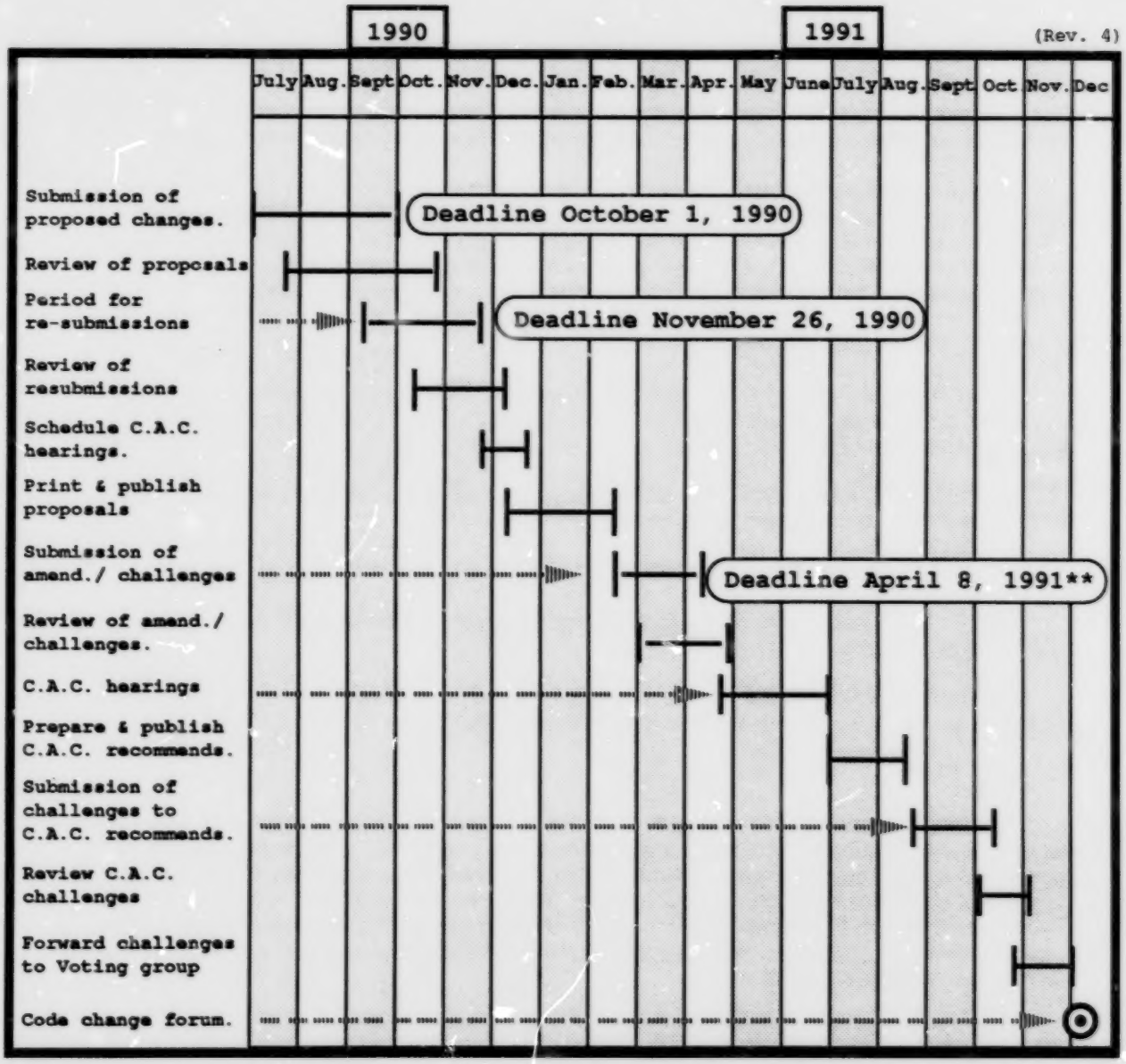
The publication of these proposals indicates the start of the next stage in our process and your opportunity to submit challenges or amendments to these listed proposals. It should be emphasized that no new change proposals will be accepted, only challenges or amendments to listed proposals. These challenges or amendments must be substantiated. A copy of the appropriate challenge amendment form is attached to the end of this document. Please indicate on each submission **the proposal number** of the original change being questioned and send in before the submission deadline.

The Code Advisory Committee (C.A.C.) has been formed and 12 members notified that they are on the committee. A preliminary meeting will be arranged in the near future to organize C.A.C. Hearings and the various details of the committee, these will be published in the next Branch Bulletin.

A copy of the latest revised timetable is enclosed showing deadlines and the anticipated dates of future events.

Please retain this document for future reference during the process as all challenges, amendments and recommendations will be cross referenced to these original proposals. This document will not be re-issued at a later date or re-printed for the code change forum.

Building Code Change Process
Timetable *


1990
1991
(Rev. 4)
July Aug. Sept Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept Oct Nov. Dec
Submission of proposed changes.
Deadline October 1, 1990
Review of proposals
Period for re-submissions
Deadline November 26, 1990
Review of resubmissions
Schedule C.A.C. hearings.
Print & publish proposals
Submission of amend./ challenges
Deadline April 8, 1991**
Review of amend./ challenges.
C.A.C. hearings
Prepare & publish C.A.C. recommends.
Submission of challenges to C.A.C. recommends.
Review C.A.C. challenges
Forward challenges to Voting group
Code change forum.

Notes: * Dates shown are approximate, other deadlines will be announced as the process proceeds

** Challenge/Amendment submissions must be received and/or postmarked not later than Monday April 8, 1991, late submissions will be automatically rejected.

1 Code Reference **1.1.3.2** Related Proposals 231 to 234 **Proposal number 231**

Proposal

Add Definition as follows:

Conditioned floor area means a *floor area* or part thereof which is heated or mechanically cooled.

Reason

The objective of this submission is to amend the British Columbia Building Code in order to establish minimum energy efficiency standards for buildings in the province. The submission reviews the issue of energy standards for buildings by examining the importance of the standards to the province, discussing the specific standards being proposed, the cost-effectiveness of the standards and the probable energy savings to the province from introducing the standards. (See document 20 Pages).

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2 Code Reference **1.1.3.2.** Related Proposals **Proposal number 223**

Proposal

Amend Definition as follows:

Exposing building face means that part of the exterior wall of a *building*, including any openings between columns, which faces one direction and is located between ground level and the ceiling of its top *storey*, or where a *building* is divided into *fire compartments*, the exterior wall of a *fire compartment* which faces one direction.

Reason

The present wording is not clear, as to the openings between columns of a building, consisting of columns supporting a roof with no wall.

If the openings between columns are not considered as part of the exposing building face a building could be constructed with only columns as supports and would give no protection from or to a building on adjacent property or to a building on the same property.

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3 Code Reference **1.1.3.2.** Related Proposals **Proposal number 305**

Proposal

Amend definition as follows:

Fire compartment means an enclosed space in a *building* that is separated from all other parts of the *building* by enclosing construction providing a *fire separation*. **having a required *fire-resistance rating*.**

Reason

A fire separation does not necessarily require a fire-resistance rating.

Appendix note A-1.1.3.2, referenced in the definition of fire separation, already states that "a fire separation may or may not have a fire-resistance rating".

Hence it is inaccurate in the definition of "fire compartment" to go on and say the "fire separation" must have a "fire-resistance rating". Stop the definition of "fire compartment" after "fire separation".

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4 Code Reference **1.1.3.2.** Related Proposals **Proposal number 337**

Proposal

Amend Definition as follows:

Post-disaster building :- **Add** in : television stations.

Reason

If all radio stations are post-disaster buildings by definition, then it would not be unreasonable to require that television stations also be so categorized. (Just a suggestion, for consideration!)

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5 Code Reference **1.1.3.2.** Related Proposals **Proposal number 229**

Proposal

Add Definition as follows:

Public means persons who have access to or use a *building* or a facility, who are members of the community and are not employed on the premises or *building*.

Editorial Note: The proponent suggests the above definition only as a basis for defining this term, alternative suggestion is to remove all references to the word public.

Reason

Provide a definition for Public, the word Public is used in the Code to describe a separate use than occupants, but especially in 3.7.

In reference to public toilets 3.7.2.41.(1), public telephones 3.7.3.24.(1) Group F Division 2 and 3, 3.7.2.40.(1) with the description of some of the occupants of a building by the word public, it becomes difficult to know who of the occupants are public, who are employees and who are in a building that are not considered public, as they have no free access or are not employees.

The use of public to describe public corridors, public way, corridors used by the public has caused sufficient confusion to warrant a definition.

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6 Code Reference **1.1.3.2.** Related Proposals 184 to 190 **Proposal number 183**

Proposal

Add Definition as follows:

Two-level shelf and rack system means a self contained structural shelf and rack storage facility within a *building* having one (1) solid intermediate deck/walkway level for personnel access.

Reason

(See document #183-A thru F.)

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7 Code Reference **1.3.2** Related Proposals **Proposal number 75**

Proposal

N.B. The following proposal is a package of changes designed to remove differences between the B.C. Building Code and the Public Hall and Theatre Safety Regulations issued by the Fire Commissioner's Office.

1.3.2.

Add definition as follows:

Licensed beverage establishment means an *assembly occupancy* or part thereof, except restaurants, where alcohol may be consumed and may include night clubs, cabarets, dance halls, beer parlours, pubs, taverns, community halls, recreation centres, and similar facilities. (See Appendix A.)

Appendix

Add Article as follows:

A-1.3.2. Licensed Beverage Establishment. Facilities which may be licensed to serve liquor on a periodic basis as well as those with permanent licenses are intended to be covered by this definition. Community halls and hotel banquet rooms, for example, are frequently rented for functions for which temporary licenses are issued. These facilities should be considered licensed beverage establishments unless it can be shown that liquor will not be permitted. Private meeting rooms such as those found in office occupancies are not intended to be considered as licensed beverage establishments.

Part 3

Amend as follows:

Table 3.2.4.A., Column 1:- Italicize " licensed beverage establishments"

Sentence 3.3.1.5.(1) :- Add Clause as follows:-
(b) which is intended as a *licensed beverage establishment*
Change Clause (b) to (c) and (c) to(d)

Sentence 3.3.1.10.(1) :- In the sixth line after "60 persons" add: "*licensed beverage establishment*"

Article 3.3.1.16. :- Add Sentence as follows:-
(6) In an *access to exit* from a *floor area* or part thereof intended for a *licensed beverage establishment* the required width of corridors, doorways, passageways and ramps shall be based on not less than 12.2 mm per person.

Article 3.3.2.6. :- In the fourth line after "100 persons " add: "*licensed beverage establishment*"

Sentence 3.4.2.1.(2) :- Delete and sustiiute the following:
(2) In *buildings* not more than 2 *storeys* in *building height*, a *floor area* is permitted to be served by one *exit* provided
(a) the *floor area* and travel distance requirements conform to Table 3.4.2.A.,
(b) the total *occupant load* served by the *exit* does not exceed 60, and
(c) the *floor area* does not contain a *licensed beverage establishment*.

Article 3.4.3.5. :- Add Sentence as follows:
(3) The aggregate required width of *exits* serving *floor areas* containing a *licensed beverage establishment* shall be determined by multiplying the *occupant load* of the area served by 12.2 mm per person for *exits* at ground level and by 18.3 mm per person for *exits* not at ground level.
Change Sentence (3) to (4).

Sentence 3.4.6.15.(1) :- Add Clause as follows:
(d) every *exit* from a *floor area* containing a *licensed beverage establishment*.

Sentence 3.4.5.1.(6) :- Italicize " licensed beverage establishments"

Article 3.7.2.15.(B.C.B.C.) :- Italicize " licensed beverage establishments"

Clause 3.2 6.11.(1)(b) :- Italicize " licensed beverage establishments"

Reason

The Office of the Fire Commissioner is proposing a number of code changes which are aimed at removing long standing discrepancies between the B.C. Building Code and the Public Hall & Threatre Safety Regulations. By defining the term "Licensed Beverage Establishment" and introducing amendments to related code sections, it is intended to bring the requirements of the two regulations substantially in line with each other. As a result, architects and designers will not be faced with designing to two different regulations.

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8 Code Reference **2.4.1.2.** Related Proposals **Proposal number 306**

Proposal

Delete Article 2.4.1.2.

Reason

(1) This is more of an administrative statement, than a technical requirement.

(2) If it is deemed important to remain, then why not expand it to the effect of saying "all building materials, appliances and equipment shall be packaged, transported, and stored in such a way as to prevent deterioration or impairment of their essential properties."

(3) It is the installed in place condition that counts, not potential hazards en route to get there.

(4) Article 2.4.1.1 already states the performance requirement adequately.

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9 Code Reference **2.8** Related Proposals **Proposal number 98**

Proposal

Add Section as follows:

Section 2.8 Seismic Upgrade Requirements

See Appendix for details of this proposal

Editorial Note:- This proposal is not in proper code format and will require extensive editing if included in the code. Location in Part 2 may be subject to change as subject matter would indicate a location in either Parts 4 or the heritage section proposal , Part 10.

Reason

To cover the issue of seismic upgrade for historic buildings which is not adequately addressed by the present Building Code. It is to be applied in conjunction with the proposed Part 10 - Alternate Compliance Methods for Heritage Buildings.

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10 Code Reference **3.1.2.1.(1)** Related Proposals **Proposal number 235**

Proposal

Amend Table 3.1.2.A. as follows:

Rows 3 and 4 **Delete** and **substitute** as follows:

A	3	*Assembly occupancies* in either arenas or stadia providing other than A4 occupancy.
A	4	*Assembly occupancies* in *buildings* where occupants are usually but not necessarily in unenclosed spaces and where all *means of egress* are designed to be kept free of fire and smoke.

Reason

This is a long overdue change to clarify the limited scope of A4 occupancies. What makes A4 occupancies different is the location of spectators in the open air (or a space protected so as to be at least as safe as open air), not just the fact that the activity they are viewing is in the open air. For example, enclosed racing grandstands and enclosed stadia should generally not be classified as A4 unless special safety measures are taken. Neither should large unenclosed stadia automatically be classified as A4. One U.S. model building code plus NFPA 101 and NFPA 102 utilize the term "smoke-protected assembly seating" to describe certain well-protected, large assembly facilities and permit them to be enclosed if special safety measures are taken.

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11 Code Reference **3.1.4.3.** Related Proposals **Proposal number 103**

Proposal

Amend Clause 3.1.4.1.(3)(c) (B.C.B.C. First Rev.) as follows:

(c) comply with the following flame spread and smoke generation requirements when tested and listed in accordance with **ULC Standard S102.4** "CSA C22.2 No. 0.3 "Test Methods for Electrical Wires and Cables" as FT 6

(i) maximum *flame spread* rating: 1.52 m,

(ii) 0.5 peak optical density, and

(iii) 0.15 max. average optical density, or

Reason

Mostly editorial, the CSA standard has now included a flame and smoke tested classification which is identical to the ULC S102.4 (both developed/reference NFPA 262). This will make it easier to identify the wiring in different locations whether they are related to the requirements, FT1, FT4 or FT6.

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12 Code Reference **3.1.4.3.** Related Proposals 258 to 274 **Proposal number 258**

Proposal

Amend Sentences as follows:

Sentences 3.1.4.1. (3), (4), and (5)(B.C.B.C.).

Transfer electrical and flame spread and smoke generation requirements to the B.C. Electrical Code.

Reason

Wiring and cables must be installed by certified electrical contractors under the B.C. Electircal Code in accordance with the Electrical Safety Act. Contractors and tradesmen should not have to refer to two codes. (See letter dated October 1,1990)

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13 Code Reference **3.1.5.** Related Proposals 258 to 274 **Proposal number 259**

Proposal

Amend Articles as follows:

Articles 3.15.15., 16, and 17 (N.B.C.) (Sentences 3.1.4.5.(5), (6), (8), and (9) (B.C.B.C.)).

Transfer requirements for electrical wiring and materials to the B.C. Electircal Code.

Reason

Wiring and other electrical materials must be installed by certified electrical contractors in accordance with the Electrical Safety Act and the B.C. Electrical Code. Contractors should not have to refer to two codes.
(See letter dated October 1,1990)

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14 Code Reference **3.1.5.5.** Related Proposals — Proposal number 21

Proposal

Delete Article 3.1.5.5.

Reason

It does not make sense to have combustible cladding on a noncombustible structure. One of the fire service's greatest fears is to have combustible cladding on any 3, let alone 6, storey structure start on fire. I have witnessed, in frustration, combustible cladding, on fire, racing to the top and into the roof space of an apartment.

This section serves no purpose other than additional product sales and work for the wood industry. This section is a hardship on the fire service and a life threat to the occupant. Please delete!

(Document #21A - 2 pages)

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15 Code Reference **3.1.5.5.(1)** Related Proposals 181, 182, 351 — Proposal number 150

Proposal

Delete Sentence 3.1.5.5.(1) and **substitute** the following:

(1) Except when *noncombustible* cladding is required by Subsection 3.2.3., an exterior non-*loadbearing* wall assembly that includes *combustible* cladding components is permitted to be used in a *building* required to be of *noncombustible construction*, provided the interior surfaces of the wall assembly are protected by a thermal barrier conforming to Sentence 3.1.5.11.(3) and the wall assembly satisfies the criteria of Sentences (5) and (6) when subjected to testing in conformance with Sentences (2) to (4).

Reason

(See Sept. 19/90 letter to Bldg Stds Branch from Council of E.I.F.S. Ind. 4 pages).

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16 Code Reference **3.1.5.5.(1).** Related Proposals 150, 182, 351 — Proposal number 181

Proposal

Delete Sentence 3.1.5.5.(1) and **substitute** the following:

(1) Except when *noncombustible* cladding is required by Subsection 3.2.3. and exterior non-*loadbearing* wall assembly that includes *combustible* cladding components is permitted to be used in a *building* required to be of *noncombustible construction*, provided the interior surfaces of the wall assembly are protected by a thermal barrier conforming to Sentence 3.1.5.11.(3) and the wall assembly satisfies the criteria of Sentences (5) and (6) when subjected to testing in conformance with Sentences (2) to (4).

Reason

(See letter #181-A thru. R)

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17 Code Reference **3.1.5.5.(1)** Related Proposals 150 181 203 204 351 — Proposal number 204

Proposal

Add Sentence 3.1.5.5.(1) as follows:

(1) Except when *noncombustible* cladding is required by Subsection 3.2.3., an exterior non-*loadbearing* wall assembly that includes *combustible* cladding components is permitted to be used in a *building* required to be of *noncombustible construction*, provided the interior surfaces of the wall assembly are protected by a thermal barrier conforming to Sentence 3.1.5.11.(3) and the wall assembly satisfies the criteria of Sentences (5) and (6) when subjected to testing in conformance with Sentences (2) to (4).

Reason

(See letter pages #203-A & B.)

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18 Code Reference **3.1.5.5.(9)** Related Proposals 150 181 203 204 351 — Proposal number 203

Proposal

Add Sentence 3.1.5.5.(9) as follows:

(9) A wall assembly permitted by Sentence (1) shall be inspected and certified as conforming to the requirements of this Article by a recognized independent and certification agency.

Reason

(See letter pages #203-A & B.)

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19 Code Reference **3.1.5.5.(9)** Related Proposals 150 181 203 204 — Proposal number 351

Proposal

Add Sentence as follows :

(9) A wall assembly permitted by Sentence (1) shall be inspected and certified as conforming to the requirements of this Article by a recognized independent inspection and certification agency.

Reason

(See 19 Sept., 1990 letter pages #351-A thru D.)

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20 Code Reference **3.1.5.5.(9)** Related Proposals 150 181 203 204 351 — Proposal number 182

Proposal

Add Sentence 3.1.5.5.(9) as follows:

(9) A wall assembly permitted by Sentence (1) shall be inspected and certified as conforming to the requirements of this Article by a recognized independent inspection and certification agency.

Reason

(See letter #182-A thru.R)

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21 Code Reference **3.1.5.8** Related Proposals **Proposal number 86**

Proposal

Add Sentence 3.1.5.8 (4) as follows:

(4) Prefabricated lay-in floor panels constructed with wood core faced with *noncombustible* material are permitted for raised floors over a *noncombustible* floor slab in a *building* required to be of *noncombustible construction.*

Reason

Millions of square feet of prefabricated lay-in floor panel systems containing wood cores have been accepted across the country for use in noncombustible buildings, generally as raised flooring for computer applications. To date, however, the acceptance has not been clarified in the actual Code. As a result some jurisdictions are either not permitting their use or are requiring additional fire protection, such as sprinklers or detection in the concealed floor space.

One of what may be a number of products/systems impacted by this change involves a prefabricated lay-in floor panel constructed with particleboa faced with noncombustible material. This product when tested in accordance with ULC S102.2 Test Method for Surface Burning Characteristics of Floor Panels is assigned a FSC of 20, Smoke Developed Classification of 15 and Fuel Contributed of 0. (see attached excerpt from ULC test report).

NFPA 13 Standard on Sprinkler Systems waives sprinklering of any combustible concealed space where all the surfaces have a flame spread rating of 25 or less.

To be consistent with the minimum requirements in NFPA 13, and equitable with other requirements of the Code it would seem logical to include a new Sentence/Clause 3.1.5.8. to permit the use of these types of raised flooring systems. This permitted use will not increase the fire risk to the building occupants. (See document - 10 pages)

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22 Code Reference **3.1.5.8.(4)** Related Proposals 183, 185 to 190 **Proposal number 184**

Proposal

Add Sentence 3.1.5.8.(4) as follows:

(4) *Combustible* flooring supported on *noncombustible* structural members is permitted in a *two-level shelf and rack system* described in Article 3.2.2.16.

Reason

(See document #183-A thru F.)

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23 Code Reference **3.1.5.10.(1).** Related Proposals **Proposal number 277**

Proposal

Amend Sentence as follows:

(1) *Combustible* interior finishes including paint, wallpaper, and other interior finishes not more than 1mm thick applied to gypsum board or a *noncombustible* backing are permitted in a *building* required to be of *noncombustible construction* .

Reason

(1) To reconcile the discrepancy with Clause 3.1.5.2.(1)(b).

(2) To inhibit the conflagration from fuel provided by combustible elements in a building required to be of noncombustible construction, which may not be required to be sprinklered.

(3) To pluralize the word "finish", both for grammatical purposes & to be consistent with the following Sentence (2) following it.

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24 Code Reference **3.1.5.10.(2).** Related Proposals **Proposal number 276**

Proposal

Amend Sentence as follows:-

(2) In a *sprinklered fire compartment* *combustible* interior wall finishes, other than foamed plastics, are permitted in a *buiding* required to be of *non-combustible construction* provided they

(a) are not more than 25 mm thick and,

(b) have a *flame-spread rating* of not more than 150 on any exposed surface, **or any surface** that would be exposed by cutting through the material in any direction.

Reason

(1) When a building is required to be of noncombustible construction the intention is to limit the fuel load. Also, to prevent flashover, ideally, again by limiting the combustible elements that could contribute to it.

(2) Article 3.1.5.12 permits combustible stud framing, already.

(3) Sentence 3.1.5.10.(2), as it stands, would permit lumber or other combustible finishes (other than foamed plastics) up to 25 mm thick. This could even be applied directly to wood stud wall framing of Article 3.1.5.12.

(4) It does not make sense to permit a whole "rabbit warren" of fully combustible office partitions, without any limit on the quantity, in a building required to be of non-combustible construction.

(5) Sentence 3.1.5.10.(1) already limits the thickness of interior finishes to 1 mm.

(6) If combustible thicknesses greater than the 1 mm of Sentence 3.1.5.10.(1) preceding are to be permitted, sprinklering is probably a statistically acceptable trade-off.

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25 Code Reference **3.1.5.12.** Related Proposals **Proposal number 85**

Proposal

Delete Sentence 3.1.5.12.(1) and **substitute** the following:

(1) Solid lumber *partitions* not less than 38 mm in thickness and wood framing in *partitions* are permitted to be used in a *building* required to be of *noncombustible construction* provided the *partitions* are not located in Group B occupancies.

Reason

This proposal will remove two restrictions and remove an unintended inequity caused by application of the current requirements.

This proposed change will permit fire resistance rated wood frame partitions to be used as nonloadbearing fire separations in noncombustible buildings and will no longer require the 600 m2 fire compartment area limitation where unrated wood framed partitions are used in unsprinklered floor areas. (Continued in documents - 77 pages)

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26 Code Reference **3.1.5.12.(1).** Related Proposals **Proposal number 275**

Proposal

Amend Clauses as follows:-

(a) are not required *fire separations*, **and**
(b) are not located in Group B *occupancies*, and
(c) are clad with gypsum board or *noncombustible* material.

Reason

(1) It does not make sense . . . in a required non-combustible building . . . to permit unlimited fuel load of combustible partition framing, which Sentence 3.1.5.10.(2) would then permit to be clad with 25 mm of combustible panelling.

(2) To restore what was removed quietly (without opportunity for public . . . and maybe not even Standing Committee . . . comment) from the 1980 NBC, e.g. 1980 NBC Clause 3.3.6.2.(2)(a), Sentence 3.3.4.6.(2), Clause 3.3.5.2.(2)(b), and no combustible framing at all permitted in Group A or B or F major occupancies.

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27 Code Reference **3.1.7.1.(2)** Related Proposals **Proposal number 291**

Proposal

Add to end of Sentence 3.1.7.1.(2) as follows;

.....or with Article A-9.10.3.1 in Appendix A.

Reason

(1) To make it known that the assemblies and ratings in Appendix A-9.10.3.1 are equally acceptable for Part 3 buildings, not for just Part 9 buildings.

(2) Proposed wording is similar to that in 9.10.3.1.

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28 Code Reference **3.1.7.3.** Related Proposals **Proposal number 301**

Proposal

Amend Article as follows:

3.1.7.3. **Lay-in Ceiling Panels.** Where a ceiling construction has a suspended membrane ceiling with lay-in panels or tiles which contribute to the required *fire-resistance rating* of the assembly, **hold-downclips or other means shall be provided to prevent the lifting of such panels or tiles in the event of a fire.** , they shall have a minimum mass of at least 1.7 kg/m2, whether or not tested with hold-down clips in place

Proponent's Note:- Sentence 3.1.7.1.(1) & possibly also 3.1.7.1.(2), if applicable, should also be amended to obviate uncertainty, by starting off "except as provided in Article 3.1.7.3. . ."

Reason

(1) To deliberately delete reliance on hold-down clips. In the "real world" they are often not replaced if the panels or tiles are temporatily removed for access to the ceiling space, such as for the installation of wiring or for maintenance. This is common knowledge.

(2) The laboratory conditions for testing assemblies in conformance with CAN A-S101M may or may not provide for uplifting forces. Hence whether tested with or without hold-down clips a minimum weight of panel or tile is recommended.

(3) The mass suggested is admittedly arbitrary, but is consistent with the mass specified in Sentence 3.2.5.14.(3) of the 1990 NBC.

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29 Code Reference **3.1.8.2.** Related Proposals 111 **Proposal number 109**

Proposal

Delete Article 3.1.8.2. and **substitute** the following:

3.1.8.2. Combustible Construction Support. *Combustible construction* that abuts on or is supported by a *fire separation* shall be constructed so that its collapse under fire conditions will not cause the collapse of the *fire separation*

Reason

The word noncombustible has been deleted from the Article. The current Article singles out the need to provide added protection to construction where there is the possibility of damage to a noncombustible fire separation should the construction collapse. Regardless of the type of construction of the fire separation, it should be protected from damage due to collapse of other construction. In such a collapse, damage would almost certainly be greater to a steel or wood frame construction fire separation and more likely to cause it to fail as opposed to one of masonry or concrete. Therefore, requiring added protection for construction only where noncombustible fire separations may be damaged is inappropriate. Such a requirement should apply to combustible fire separations as well.

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30 Code Reference **3.1.8.5.** Related Proposals 10 **Proposal number 8**

Proposal

Add Sentence 3.1.8.5.(4) as follows:

(4) Every door used as a *closure*, shall have a permanent sign acceptable to the *authority having jurisdiction*, posted on the visible side of the door when it is in the open position with the words " Fire door keep closed", except where the door

(a) is located within a *suite*, or
(b) serves as an *access to exit* from a *suite*.

Reason

Many developers will not post signs unless there is a requirement for such signage. According to our Municipal Prosecutor, we cannot lay charges for wedging separation doors open unless there are signs telling the occupants to keep the doors closed. The signage should be required at the time of building construction, not after occupancy. The B.C. Fire Code Reg. does not require this signage.

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31 Code Reference **3.1.8.9.(1).** Related Proposals — Proposal number **283**

Proposal

Amend Sentence as follows:

(1) *Fire dampers* shall conform to the requirements of this Article. (See also Article 3.2.4.13)

Reason

I realize there must be a limit on how much cross-referencing is done for related (or differing) requirements, but I suggest there could be significant benefit to code users to warrent this proposed note addition to Sentence 3.1.8.9.(1).

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32 Code Reference **3.1.8.15.** Related Proposals — Proposal number **289**

Proposal

Delete Table 3.1.8.B. and **substitute** as follows:

See Appendix for details of this proposal

Editorial Note:- Software limitations do not permit inclusion within main body of document.

Reason

(1) The present wording is particularly uncertain as to whether an unlimited amount of wired glass or glass block is permitted in the wall between an exit enclosure and the remainder of the building.

(2) the proposed rewording limits the amount of glass in both the rated door and not in a door. It also places the same area limitations on glass in dead-end corridors providing the only means of egress.

(3) The wording has been questioned with Ottawa by your own Building Standards Branch, among others. (Reference Nick Jablanczy letter of December 14, 1988)

N.R.C. staff acknowledge that the wording is deficient.

(4) It is on the agenda of the N.B.C. Standing Committee of Fire Protection for review.

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33 Code Reference **3.1.8.17.(1)** Related Proposals — Proposal number **294**

Proposal

Add Clause as follows:

(d) There is not an area of refuge adjacent to it, pursuant to article 3.7.3.27.

Reason

To limit potential intolerable radiant heat intensities or durations, in an area of refuge a person could be occupying rather than fleetingly passing by

---

34 Code Reference **3.1.9.1.(1).** Related Proposals 258 to 274 — Proposal number **260**

Proposal

Amend Sentence as follows:

Sentence 3.1.7.1. (1) (B.C.B.C.)

Delete requirements for wiring, conduit, electrical outlet boxes and other electrical equipment and transfer these requirements to the B.C. Electrical Code.

Reason

Under the Electrical Safety Act wiring and other electrical materials must be installed by certified electrical contractors in accordance with the B.C. Electrical Code. Contractors and tradesmen should not have to refer to two codes.

---

35 Code Reference **3.1.9.2.** Related Proposals 258 to 274 — Proposal number **261**

Proposal

Amend Articles 3.1.9.2. and 3.1.9.3. as follows:

Sentences 3.1.7.2. (1) to (6) (B.C.B.C.)

Delete requirements for wiring, conduit, electrical outlet boxes and other electrical equipment and transfer these requirements to the B.C. Electrical Code.

Reason

Under the Electrical Safety Act wiring and other electrical materials must be installed by certified electrical contractors in accordance with the B.C. Electrical Code. Contractors and tradesmen should not have to refer to two codes.

---

36 Code Reference **3.1.15.1.** Related Proposals — Proposal number **280**

Proposal

Delete Articles 3.1.15.1. and 3.2.3.18. and **substitute** as follows:

3.1.15.1 Roof Covering Classification

(1) Except as provided in Sentence (2), every *building* shall have a Class A, B or C roof covering in conformance with CAN/ULC-S107-M "Standard Methods of Fire Tests of Roof Coverings."

(2) [Same wording as in Sentence 3.2.3.18.(2)]

Reason

The requirements of 3.2.3.18 and 3.1.15 are integral with each other. It is logical to consolidate them.

The requirements of 3.2.3.18 have a closer affinity to the specific subsection dealing exclusively with roof coverings than to the spatial separation requirements of subsection 3.2.3. Hence this proposal to consolidate them under subsection 3.1.15 rather than elsewhere.

---

26 Code Reference **3.1.5.12.(1).** Related Proposals

Proposal number **275**

Proposal

Amend Clauses as follows:-

(a) are not required *fire separations*, and
(b) are not located in Group B occupancies, and
(c) are clad with gypsum board or *noncombustible* material

Reason

(1) It does not make sense . . . in a required non-combustible building . . . to permit unlimited fuel load of combustible partition framing, which Sentence 3.1.5.10.(2) would then permit to be clad with 25 mm of combustible panelling.

(2) To restore what was removed quietly (without opportunity for public . . . and maybe not even Standing Committee . . . comment) from the 1980 NBC, e.g. 1980 NBC Clause 3.3.6.2.(2)(a), Sentence 3.3.4.6.(2), Clause 3.3.5.2.(2)(b), and no combustible framing at all permitted in Group A or B or F major occupancies.

---

27 Code Reference **3.1.7.1.(2)** Related Proposals

Proposal number **291**

Proposal

Add to end of Sentence 3.1.7.1.(2) as follows;

.....or with Article A-9.10.3.1 in Appendix A.

Reason

(1) To make it known that the assemblies and ratings in Appendix A-9.10.3.1 are equally acceptable for Part 3 buildings, not for just Part 9 buildings.

(2) Proposed wording is similar to that in 9.10.3.1.

---

28 Code Reference **3.1.7.3.** Related Proposals

Proposal number **301**

Proposal

Amend Article as follows:

3.1.7.3. Lay-In Ceiling Panels. Where a ceiling construction has a suspended membrane ceiling with lay-in panels or tiles which contribute to the required *fire-resistance rating* of the assembly, **hold-downclips or other means shall be provided to prevent the lifting of such panels or tiles in the event of a fire.** , they shall have a minimum mass of at least 1.7 kg/m2, whether or not tested with hold-down clips in place.

Proponent's Note:- Sentence 3.1.7.1.(1) & possibly also 3.1.7.1.(2), if applicable, should also be amended to obviate uncertainty, by starting off "except as provided in Article 3.1.7.3. . ."

Reason

(1) To deliberately delete reliance on hold-down clips. In the "real world" they are often not replaced if the panels or tiles are temporarily removed for access to the ceiling space, such as for the installation of wiring or for maintenance. This is common knowledge.

(2) The laboratory conditions for testing assemblies in conformance with CAN A-S101M may or may not provide for uplifting forces. Hence whether tested with or without hold-down clips a minimum weight of panel or tile is recommended.

(3) The mass suggested is admittedly arbitrary, but is consistent with the mass specified in Sentence 3.2.5.14.(3) of the 1990 NBC.

---

29 Code Reference **3.1.8.2.** Related Proposals 111

Proposal number **109**

Proposal

Delete Article 3.1.8.2. and **substitute** the following:

3.1.8.2. Combustible Construction Support. *Combustible construction* that abuts on or is supported by a *fire separation* shall be constructed so that its collapse under fire conditions will not cause the collapse of the *fire separation*

Reason

The word noncombustible has been deleted from the Article. The current Article singles out the need to provide added protection to construction where there is the possibility of damage to a noncombustible fire separation should the construction collapse. Regardless of the type of construction of the fire separation, it should be protected from damage due to collapse of other construction. In such a collapse, damage would almost certainly be greater to a steel or wood frame construction fire separation and more likely to cause it to fail as opposed to one of masonry or concrete. Therefore, requiring added protection for construction only where noncombustible fire separations may be damaged is inappropriate. Such a requirement should apply to combustible fire separations as well.

---

30 Code Reference **3.1.8.5.** Related Proposals 10

Proposal number **8**

Proposal

Add Sentence 3.1.8.5.(4) as follows:

(4) Every door used as a *closure*, shall have a permanent sign acceptable to the *authority having jurisdiction*, posted on the visible side of the door when it is in the open position with the words " Fire door keep closed", except where the door

(a) is located within a *suite*, or
(b) serves as an *access to exit* from a *suite*.

Reason

Many developers will not post signs unless there is a requirement for such signage. According to our Municipal Prosecutor, we cannot lay charges for wedging separation doors open unless there are signs telling the occupants to keep the doors closed. The signage should be required at the time of building construction, not after occupancy. The B.C. Fire Code Reg. does not require this signage.

---

31 Code Reference **3.1.8.9.(1).** Related Proposals **Proposal number 283**

Proposal

Amend Sentence as follows:

(1) *Fire dampers* shall conform to the requirements of this Article. (See also Article 3.2.4.13)

Reason

I realize there must be a limit on how much cross-referencing is done for related (or differing) requirements, but I suggest there could be significant benefit to code users to warrent this proposed note addition to Sentence 3.1.8.9.(1).

---

32 Code Reference **3.1.8.15.** Related Proposals **Proposal number 289**

Proposal

Delete Table 3.1.8.B. and **substitute** as follows:

See Appendix for details of this proposal

Editorial Note:- Software limitations do not permit inclusion within main body of document.

Reason

(1) The present wording is particularly uncertain as to whether an unlimited amount of wired glass or glass block is permitted in the wall between an exit enclosure and the remainder of the building.

(2) the proposed rewording limits the amount of glass in both the rated door and not in a door. It also places the same area limitations on glass in dead-end corridors providing the only means of egress.

(3) The wording has been questioned with Ottawa by your own Building Standards Branch, among others. (Reference Nick Jablanczy letter of December 14, 1988)

N.R.C. staff acknowledge that the wording is deficient.

(4) It is on the agenda of the N.B.C. Standing Committee of Fire Protection for review.

---

33 Code Reference **3.1.8.17.(1)** Related Proposals **Proposal number 294**

Proposal

Add Clause as follows:

(d) There is not an area of refuge adjacent to it pursuant to article 3.7.3.27.

Reason

To limit potential intolerable radiant heat intensities or durations, in an area of refuge a person could be occupying rather than fleetingly passing by.

---

34 Code Reference **3.1.9.1.(1).** Related Proposals 258 to 274 **Proposal number 260**

Proposal

Amend Sentence as follows:

Sentence 3.1.7.1. (1) (B.C.B.C.)

Delete requirements for wiring, conduit, electrical outlet boxes and other electrical equipment and transfer these requirements to the B.C. Electrical Code.

Reason

Under the Electrical Safety Act wiring and other electrical materials must be installed by certified electrical contractors in accordance with the B.C. Electrical Code. Contractors and tradesmen should not have to refer to two codes.

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35 Code Reference **3.1.9.2.** Related Proposals 258 to 274 **Proposal number 261**

Proposal

Amend Articles 3.1.9.2. and 3.1.9.3. as follows:

Sentences 3.1.7.2. (1) to (6) (B.C.B.C.)

Delete requirements for wiring, conduit, electrical outlet boxes and other electrical equipment and transfer these requirements to the B.C. Electrical Code.

Reason

Under the Electrical Safety Act wiring and other electrical materials must be installed by certified electrical contractors in accordance with the B.C. Electrical Code. Contractors and tradesmen should not have to refer to two codes.

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36 Code Reference **3.1.15.1.** Related Proposals **Proposal number 280**

Proposal

Delete Articles 3.1.15.1. and 3.2.3.18. and **substitute** as follows:

3.1.15.1 Roof Covering Classification

(1) Except as provided in Sentence (2), every *building* shall have a Class A, B or C roof covering in conformance with CAN/ULC-S107-M "Standard Methods of Fire Tests of Roof Coverings."

(2) [Same wording as in Sentence 3.2.3.18.(2)]

Reason

The requirements of 3.2.3.18 and 3.1.15 are integral with each other. It is logical to consolidate them.

The requirements of 3.2.3.18 have a closer affinity to the specific subsection dealing exclusively with roof coverings than to the spatial separation requirements of subsection 3.2.3. Hence this proposal to consolidate them under subsection 3.1.15 rather than elsewhere.

---

37 Code Reference **3.2.1.1.(3)(b).** Related Proposals **Proposal number 225**

Proposal

Amend Clause 3.2.1.1.(3)(b). (B.C.B.C.) as follows

(b) Except from within enclosures described in clause (c), the *mezzanine* to a height of at least 2150 mm above the *mezzanine* floor, is **visually** open to the floor space below except for *guards* not exceeding 1070 mm in height, columns and posts, and

Reason

The word "visually" should be deleted. The occupant at the mezzanine floor should be able to observe, hear and detect odour from the floor below. Presently, the word "visually" restrict to visibility only, but not addressing sound and odour.

The present wording of "visually open" allows total enclosure with clear glass. In use, the clear glass, many times is covered with curtains, papers, etc. and in effect becomes a non-visual enclosure.

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38 Code Reference **3.2.1.1. (4)** Related Proposals **Proposal number 88**

Proposal

Amend Sentence 3.2.1.1.(4) (B.C.B.C.) as follows:

(4) Except as provided in Sentence (5), *mezzanines* shall not be considered a *storey* in *building height* and may be totally enclosed provided the total area of the *mezzanine* or *mezzanines* does not exceed 10% of the area of the ***suite*** storey in which they are located.

Reason

The existing wording refers to the area of the enclosing suite instead of storey, which implies that a mezzanine with a very small floor area within a small suite of a much larger building could add an extra storey in height to the building classification. For instance, a 10 square metre mezzanine in a 90 square metre suite could reclassify an entire 10,000 square metre building!

The additional building storeys counted may require a change from combustible to noncombustible construction even in cases where the actual area concerned is small and has a relatively insignificant impact on life safety.

---

39 Code Reference **3.2.1.1.(6).** Related Proposals **Proposal number 288**

Proposal

Amend Sentence as follows:

(6) When a *mezzanine* is required to be considered as a *storey* in determining *building height*, its floor assembly shall be constructed in conformance with the ***fire separation*** **requirements** *fire-resistance ratings* for floor assemblies in Articles 3.2.2.16 to 3.2.2.62.

Reason

(1) Articles 3.2.2.16 to 3.2.2.62 relate to fire-resistance ratings for floor assemblies, rather than fire separations. Proposed wording is similar to that in 3.2.1.4.(1).

(2) The fire separation requirements for mezzanines are covered in Sentences 3.2.8.1.(1) and 3.2.8.2.(1).

---

40 Code Reference **3.2.1.2.** Related Proposals **Proposal number 217**

Proposal

Delete Article 3.2.1.2. and **substitute** as follows:

3.2.1.2. Storage Garage Considered as a Separate Building.

(1) Where a *basement* is used primarily as a *storage garage*, the *basement* is permitted to be considered as a separate *building* for the purposes of Subsection 3.2.2. provided

(a) the floor above the *basement* is constructed as a *fire separation* of masonry or concrete having a *fire-resistance rating* of not less than 2 h,

(b) the portion of exterior walls of the *basement* located within 5 m on either side of a *firewall* located above the *basement* shall be constructed of masonry or concrete having a *fire-resistance rating* of at least 2 h with no *unprotected openings*, and

(c) be separated from the *building* above by apron or spandrel walls, constructed of masonry or concrete, not less than 1m high or by a canopy not less than 1m wide at the floor level above the *basement* and the apron, spandrel or canopy shall have a *fire-resistance rating* not less than the construction required for the floor assembly and shall have no *unprotected openings*.

Reason

The requirements as written, are intended to prevent the spread of a fire from that portion of a building, treated as a separated building, to another "building". The total enclosure of the exterior wall with a fire separation is one of the only areas, except for the extension of a firewall above the roof of the building at difference heights, where an exterior wall is required to be a fire separation. This requirement as written requires all openings through the exterior fire separation to be rated closure, even the vehicle entrances, lobby doors, etc.

The requirement for a 1m apron is similar to an existing requirement to prevent the spread of fire between floors in Sentence 3.3.6.2. for Mercantile occupancies and 3.3.7.4. for Industrial occupancies.

The rational used for the distance of 5m for the 2 hour rated wall on each of the line of the firewall above, is to prevent a fire occurring in the basement parking garage and spreading up and bypassing the firewall on the outside of the building.

Sentence 3.2.3.11. is used as an example of the distance, to prevent the horizontal spread of a fire.

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41 Code Reference 3.2.1.2. Related Proposals **Proposal number 196**

Proposal

Amend Article 3.2.1.2. as follows:

After ". above the adjoining ground level" **Insert** except for permitted openings in the exterior wall.

Reason

Some people interpret this requirement as not allowing openings in the exterior wall and wonder why vehicular entrances are permitted. Overhead doors are generally not rated so I think this should be clarified.

---

42 Code Reference 3.2.1.2. Related Proposals **Proposal number 316**

Proposal

Add Sentences as follows:

(2) Where structures above *basements* complying with Article 3.2.1.2.(1) satisfy the separation provisions of 3.2.3 and the accessibility requirements of 3.2.5. they may be considered as *separate buildings*.

A-3.2.1.2.(2) The use of joint or several fire alarms should be coordinated with the local fire department to satisfy their requirements.

Reason

Subsection 3.2.1.2. implies structures above parking garages may be treated as separate buildings only for the purposes of 3.2.2. This could result in the application of high rise measures to remote low rise portions of a complex as well as other onerous provisions.

There are many projects with several structures located above a large parking garage. If one of these was a high rise then the whole building would be a high rise including all structures. Where some of the structures are low rise townhouses completely separated from the parking garage the application of high rise measures is not warranted. There are numerous other subsections where applying provisions of a larger building are not appropriate to well separated smaller buildings.

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43 Code Reference 3.2.1.4.(1) Related Proposals **Proposal number 303**

Proposal

Amend Sentence as follows:

(1) A floor assembly immediately above a *basement* shall be constructed as a *fire separation* having a *fire-resistance rating* conforming to the requirements for floor assemblies in Articles 3.2.2.16 to 3.2.2.62, but shall not be less than 45 minutes, unless more restrictive ratings elsewhere in this code govern such as *major occupancy* separations in Subsection 3.1.3 or in Section 3.3.

Reason

To assist users of the code, who may not realize that sentence 3.2.1.4.(1) may be over-ridden by more restrictive requirements elsewhere.

An alternative to amending the wording of 3.2.1.4.(1), per se, could be to add an appendix note instead.

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44 Code Reference 3.2.2. Related Proposals **Proposal number 322**

Proposal

Amend Subsection 3.2.2. as follows:

(1) Group C *occupancies* shall be *sprinklered* using listed residential sprinkler heads in *dwelling units*.

(2) Single and two family dwellings shall be designed to NFPA 13 D standards.

(3) Except as permitted in Sentence (2) sprinkler systems may be designed in accordance with NFPA 13 R regarding sizing of piping, location of sprinklers and ommission of sprinklers from certain areas.

(4) Corridors may be designed in accordance with NFPA 13 R criteria but other non-dwelling parts of Groups C occupancies shall be designed in accordance with NFPA 13 criteria.

(5) The ommission of sprinklers from washrooms will not be permited in *buildings* subject to the provisions of Article 3.2.6.

(6) Except as permitted in Sentence (2) *combustible* attic spaces with clearances greater than 150 mm and areas greater then 5 m2 shall be sprinklered unless the *suite fire separations* extend to the roof.

(7) Exterior balconies with *combustible* ceilings or roofs more than 1.2 m wide shall be *sprinklered*.

Add to Appendix as follows:

A.3.2.2.7. (6) Parapets are not required.

Editorial Note:- (Proposals 322 and 323 combined.) This proposal is an over-simplication of the code changes required to achieve the proponent's intent. In the event this proposal is adopted substancial further code modification would be required.

Reason

(1) The application of residential sprinkler systems to all dwellings could eliminate 2/3 of all residential fire deaths and reduce burn and other injuries even more. If this argument is not accepted wording should be changed to "Dwelling units in Group C occupancies required to be sprinklered shall use listed residential sprinkler heads."

(2),(3),(4) Compensates for using the more expensive residential heads and defines their criteria more precisely. It also confirms a BUILDING CODE APPEAL BOARD decision which was overturned after my appeal stating that this should be a CODE change. not an interpretation change.

(5) Relaxations for fully sprinklered high rise buildings are compomised by unsprinklered areas. Sprinklering washrooms but allowing unsprinklered closets seems reasonable.

(6) and (7) NFPA 13 R systems allow conflagurations to develop which the above clauses with help control.

(See document 5 pages)

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45 Code Reference 3.2.2.3.(1)(h) Related Proposals 183,184,186 to 190 **Proposal number 185**

Proposal

Add Cause 3.2.2.3.(1)(h) as follows:

(h) Steel members for *two-level shelf and rack systems* conforming to Article 3.2.2.16.

Reason

(See document #183-A thru F.)

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46 Code Reference **3.2.2.6.** Related Proposals **Proposal number 227**

Proposal

Add Sentence as follows:

(6) For the purposes of this subsection a *building* face will be considered as facing a *street* when 50% of the *building* face fronts a *street* conforming with the requirements of access routes in Sentences 3.2.5.2.(1) to (5).

Reason

Currently the Building Code does not regulate how much of a building face must front a street in order for the building to be considered as facing a street. It is possible for a building to be considered as facing a street when in fact only the width of the street fronts the building. The minimum width of a yard used as a street 6.0 m . Therefore, the minimum width of a building face fronting a street could be 6.0 m.

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47 Code Reference **3.2.2.6.(1)** Related Proposals **Proposal number 222**

Proposal

Amend Sentence 3.2.2.6.(1) as follows:

(1) Every *building* shall face a *street* and be within 15 m of a *street* located in conformance with the requirements for access routes in Articles 3.2.5.5. and 3.2.5.6.

Reason

The present requirement does not clearly limit the maximum setback that a building may be from a "street".
Article 3.2.5.6. does state that an access route can be no greater than 15 m from the face of the building.
It is felt that where a building faces a "street" it should clearly specify the maximum building setback.
The addition of the statement "within 15 m of a street" in 3.2.2.6.(1) will clarify.

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48 Code Reference **3.2.2.7.** Related Proposals **Proposal number 46**

Proposal

Amend Article as follows:

3.2.2.7. Exterior Balconies. Exterior balconies shall be constructed in accordance with the type of construction **required** and the fire resistance ratings required for floors as specified in Articles 3.2.2.16. to 3.2.2.62. as applicable to the *occupancy* classification of the *building*, or as per Subsection 3.2.3., exterior wall requirements, whichever is more restrictive.

Reason

This will help restrict any fire originating on a balcony or moving out through a building opening from bridging a fire separation by feeding back into a joist or truss space from the balcony ceiling.

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49 Code Reference **3.2.2.11.(2)** Related Proposals **Proposal number 284**

Proposal

Delete Clause 3.2.2.11.(2)(c).

Reason

It duplicates what is already covered by Article 3.1.7.6.

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50 Code Reference **3.2.2.16.** Related Proposals 183 thru 190 **Proposal number 186**

Proposal

Add Article as follows:

3.2.2.7. Two-level Shelf and Rack System

(1) Where a *two-level shelf and rack system* is provided, the intermediate deck/walkway level need not have a *fire-resistance rating* or be constructed as a *fire separation* provided the *two-level shelf and rack system* conforms with Sentence (2) to (5), Sentence 3.2.4.12.(2), Articles 3.3.5.10, 3.4.2.3., and 4.1.10.7.

(2) The intermediate deck/walkway level shall be

(a) constructed as a continuous horizontal membrane, and

(b) provided with draft stops not less than 500 mm deep immediately adjacent to and surrounding

(i) all openings, and

(ii) the perimeter of the deck/walkway level where it does not terminate at a wall.

(3) Where a *building* is provided with a *two-level shelf and rack system*, as described in this Article, automatic sprinkler protection shall be provided

(a) at each level of the *two-level shelf and rack system*, and

(b) throughout the *building*

(4) the sprinkler system required by Sentence (3) shall be designed, constructed, installed, and tested in conformance with

(a) NFPA 13 "Installation of Sprinkler Systems ", and

(b) NFPA 231-C "Rack Storage of Materials".

(5) The sprinkler system required by Sentence (3)

(a) shall be electrically supervised in conformance with Sentence 3.2.4.16.(5), and

(b) the operation of the sprinkler system in Clause (a) will cause a signal to be transmitted to the fire department in conformance with Sentence 3.2.4.7.(3).

Reason

(See document #183-A thru F.)

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51 Code Reference **3.2.2.22.(3)** Related Proposals

Proposal number **118**

Proposal

Amend Sentence 3.2.2.22.(3) as follows:

(3) A *building* classified as Group A, Division 2 *occupancy* that ~~is~~ **is not more than** does not exceed 1 *storey* in *building height*, and in which the *building area* is not greater than 3200 m2 if unsprinklered, or 6,400 m2 if *sprinklered*,

a) ~~is permitted to~~ may be constructed with a roof of *heavy timber construction* and have columns of *heavy timber construction*. , or

b) may be constructed with a roof not requiring a *fire resistance rating* if of *non-combustible construction* and, if not *sprinklered*, *building area* does not exceed 3,200 m2.

Reason

It would seem reasonable that if Sentence (3) allows combustible construction of heavy timber in lieu of the 1 hour roofing rating that a roof assembly of noncombustible construction should be permitted without a fire resistance rating as long as the building is within the area limits specified in Sentence (3).

Section 3.2.2.12.(1) (3.2.2.8.(1)B.C.B.C.) already provides for the deletion of the fire resistance rating when the building is sprinklered for all heights and areas under 3.2.2.22. (3.2.2.15.B.C.B.C.) Thus the above revision would be a logical complement to the existing Code provisions.

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52 Code Reference **3.2.2.29.** Related Proposals 22, 23 & 24

Proposal number **25**

Proposal

Amend Articles 3.2.2.29., 3.2.2.30, 3.2.2.31. and 3.2.2.33. as follows:

That all Institutional buildings, Group B1 and B2 occupancies, be sprinklered.
Add to the above sections: "Is Sprinklered".
Delete and/or amend the appropriate requirements to accommodate the proposed change.
(Editorial Note:- These Articles will have to be completely re-written to remove all references to unsprinklered buildings in the event his proposal is adopted.)

Reason

Four page document on " Installation of Sprinkler Systems in all Group B & C Occupancies ". Topics discussed include quick response sprinkler heads, fire scenario and benefits and cost effectiveness.
(Document #22A - 4 pages)

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53 Code Reference **3.2.2.34.** Related Proposals 23, 24 & 25

Proposal number **22**

Proposal

Amend Articles 3.2.2.34., 3.2.2.35, 3.2.2.37. and 3.2.2.38. as follows:
That all residential buildings, Group C occupancies, be sprinklered.
Add to the above Sections: "Is sprinklered".
Delete and/or amend the appropriate requirements to accommodate the proposed change.
(Editorial Note:- These Articles will have to be completely re-written to remove all references to unsprinklered buildings in the event his proposal is adopted.)

Reason

Four page document on " Installation of Sprinkler Systems in all Group B & C Occupancies ". Topics discussed include quick response sprinkler heads, fire scenario and benefits and cost effectiveness. (Document #22A - 4 pages)

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54 Code Reference **3.2.2.35.** Related Proposals

Proposal number **211**

Proposal

Delete Article 3.2.2.35.

Reason

There is no justification to increase the permitted area of Residential Building up to 3 stories in height, even with the increase of floor and mezzanine rating frim 3/4 hour to 1 hour and a roof rating of 1 hour.

In the development of these regulations, and at the public hearing process, no better reason was given to lessen the requirements than were given for no change.

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55 Code Reference **3.2.2.36.** Related Proposals

Proposal number **210**

Proposal

Delete Article 3.2.2.36.

Reason

A 4 storey residential building under the proposed requirement, can in effect be a wood frame building 8 levels in height not including the maximum height of 2 m for the floor of the first storey above grade. Assuming a floor area would be 8 feet in height plus approximately 1 foot for the floor system, the height of the upper most level could be 69 feet above grade.

The present City of Vancouver regulations are more acceptable as they allow only 4 "levels" not 4"storey", limit the height of the upper most level above grade, defined grade, impoved sprinkler system, pressurized corridors, improved egress and other improved life safety items.

In the development of these regulations and the public hearing process, there was no better reason given to lesson the present requirement than was given for no change. There is no justification to change the requirement, to not only double the area of a permitted 3 storey wood frame residential building, but also to add a 4th storey simply by sprinklering. there is no justification that by increasing the floor and mezzanines rating from 3/4 hour for 3 storey to the 1 hour for 4 storey and the roof rating to 1 hour should permit a 1200 m2 4 storey sprinklered combustible building compared to 600 m2 for 3 storey unsprinklered combustible building.

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56 Code Reference **3.2.3.1.** Related Proposals **Proposal number 87**

Proposal

Delete Sentence 3.2.3.1.(3) and **substitute** the following:

(3) For the purposes of determining the type of construction and cladding and the *fire-resistance rating* of an exterior wall, the *exposing building face* shall be taken as the projection of

(a) the exterior wall, or

(b) where the exterior wall is non-planar, a section of the exterior wall,

onto a vertical plane located so that no portion of the wall or section of the exterior wall is between the vertical plane and the line to which the *limiting distance* is measured and, for these purposes, the area of *unprotected openings* shall be determined from Table 3.2.3.A. or Table 3.2.3.B.

Amend Sentence 3.2.3.2.(1) as follows:

(1) The area of an *exposing building face* shall be calculated as the area of

(a) an exterior wall, or

(b) where the exterior wall is non-planar, a section of exterior wall

facing in one direction on any side of a *building* measured from finished ground level to the uppermost ceiling, except .....

Editorial Note:- The format of this modification, may have to be altered

Reason

The goal of the spatial separation requirements is to safeguard neighboring properties from the effects of fire issuing from an opening in an exposed building face. The 1990 NBC provides a stringent level of safety, but imposes impractical restrictions.

When the entire face of a fire compartment must be evaluated as one, stringent requirements applicable to a small projection would govern design of the entire face. For example, even if only 5% of an exterior wall is within 3 m of a property line and 95% is located 15 m from the property line, the entire exterior wall facing that line would have to be constructed as if located 3 m from the property line.

A more equitable procedure would be to evaluate spatial separation requirements for each wall section located at a different limiting distance. At each location the setback, type of construction and restrictions on the number of unprotected openings provides the appropriate protection.

When the wall is divided up into smaller sections there is less likelihood that the allowable openings will be clustered at one location. Application of the proposed requirements will better reflect the intent of the Code and its assumption that openings are evenly distributed.

---

57 Code Reference **3.2.3.5.** Related Proposals **Proposal number 281**

Proposal

Delete Article and **substitute** the following:

3.2.3.5 Closures. Wired glass or glass block are not *closures* for the purpose of this Subsection.

Reason

The present wording is misleading.

Wired glass or glass block do not qualify as closures even when the limiting distance exceeds 1.2 m. They only permit the area of unprotected openings to be doubled.

---

58 Code Reference **3.2.3.7.** Related Proposals **Proposal number 334**

Proposal

Add Sentence as follows:

(4) In addition to the requirements of Clauses (1)(a) and (2)(a), the required *non-combustible construction* shall be provided by masonry or concrete in unsprinklered buildings, if the *limiting distance* would not permit any *unprotected openings*.

Reason

(1) Two exterior walls abutting a common property line have the same non-combustible construction requirements, and the same aggregate required fire-resistance ratings, as for a single, party wall, e.g. Sentence 3.2.3.7.(2) would require each of the two abutting exterior walls to have a fire-resistance rating of 2 hours, for an aggregate rating of 4 hours for the two of them, for retail occupancies.

As a firewall, Sentence 3.1.10.2.(1) would also require a 4 hour rating

(2) Article 3.2.3.4 requires that party walls be constructed as firewalls.

(3) Sentence 3.1.10.2.(3) requires that firewalls be constructed of masonry or concrete.

(4) It is the potential void stud spaces of steel stud wall construction, for example, that could lose their integrity as fire separations equivalent to a fire wall. e.g. wiring, punctures of wall membranes, workmanship.

(5) A calculated risk could be taken for a sprinklered building.

---

59 Code Reference **3.2.3.7.(4)** Related Proposals **Proposal number 120**

Proposal

Add Sentence 3.2.3.7.(4) as follows:

(4) Exterior precast concrete tilt-up walls with pinned base connections shall be laterally supported by construction with the same *fire resistance rating* as is required for the walls by Sentences 3.2.3.7.(1) and (2), except where the *building* is *sprinklered* in conformance with Sentence 3.2.2.12.(1).

Reason

There have been considerable problems with the application of Code requirements to tilt-up wall systems and their ability to remain stable for the required time rating.

---

60 Code Reference **3.2.3.7.(4)** Related Proposals — Proposal number **309**

Proposal

Add Sentence as follows:

(4) Where an exterior *fire separation* is dependent on an unrated assembly for lateral support,
(a) The *building* shall be *sprinklered*, or
(b) The supporting assembly shall have a *fire-resistance rating* of at least 3/4 hr., or
(c) Independent support with a *fire-resistance rating* of at least 3/4 hr. shall be provided to resist a uniform lateral preasure on the wall of 0.25 kPa.

Reason

a. This will satisfy the concerns of building officials for stability of tilt-up concrete walls.
b. It will provide more stringent requirements for other types of construction where lateral stability in a fire is now ignored.
c. It will provided specific guidelines to designers, rather than asking for a blanket certification that the wall won't collapse in a fire.

---

61 Code Reference **3.2.3.14.(1)** Related Proposals — Proposal number **218**

Proposal

Amend Sentence 3.2.3.14.(1) as follows:

(1) Except as provided in Sentence 3.2.3.13.(1) and 3.2.3.20.(4) , where an opening in an exterior wall of a *fire compartment* as required by 3.2.3.2. and 3.2.3.3., is exposed to an opening in the exterior wall of another *fire compartment* as required by 3.2.3.2. and 3.2.3.3, and the planes of the two 2 walls are parallel or at an angle of 135 degrees or less, measured from the exterior of the *building* , **the** . The openings in the two **2** *fire compartments* shall be separated by a distance of **not less than** at least equal to Do where

Do = 2D - (Ø x D), but in no case less than 1 m, where
90

D = the greater required *limiting distance* for the *exposing building faces* of the **2** two *fire compartments*, and

Ø = the angle made by the intersecting planes of the *exposing building faces* of the **2** two *fire compartments*, (in the case where the exterior walls are parallel and face each other, Ø = 0°).(See Appendix A)

Reason

(See document pages #218-A thru C.)

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62 Code Reference **3.2.4.2.(1)** Related Proposals — Proposal number **290**

Proposal

Amend Sentence as follows:

(1) Where there are openings through a *firewall*, other than those for piping, tubing, wiring **and** totally enclosed noncombustible raceways, and ducts, the requirements in this Subsection .....

Reason

To add reference to ducts, assuming it is not intended to "penalize" the firewall situation for them any more than for piping, tubing, etc.

---

63 Code Reference **3.2.4.7.(1)(a)** Related Proposals — Proposal number **286**

Proposal

Delete Clause 3.2.4.7.(1)(a) and **substitute** as follows:

(a) A *building* containing Group A *occupancies* having an aggregate *occupant* load of more than 300

Reason

A movie theatre building may contain multiple theatres, none of which have an occupant load of 300, but the building in which they are located could have an occupant loud of 1000 or more.

With the present wording of 3.2.4.7.(1), connection to a central alarm agency in not required.

The desireability for connection to a central alarm agency is probably about the same, whether over 300 occupants are in one theatre or side-by-side theatres, as long as they are in the same building.

---

64 Code Reference **3.2.4.7.(1)(f)** Related Proposals 194 — Proposal number **195**

Proposal

Add Clause 3.2.4.7.(1)(f) as follows:

(f) Senior citizen apartments Group C, required to provide a standpipe under 3.2.5.9.(1)(e).

Reason

The increasing number of senior citizens apartments and the fact that these citizens are living longer but still deteriorate in physical capabilities, causes great hardships on the responding fire fighter companies to safely evacuate people, therefore, rapid response to direct alarm allows more time to perform the evacuation.

(See document 1 page).

---

65 Code Reference **3.2.4.11.(1).** Related Proposals

Proposal number 313

Proposal

Add Clauses as follows:

(c) In shafts required to be equipped with *fire detectors* whether or not protected by automatic sprinklers in conformance with 3.2.4.16.

(d) Except where sprinkler system in shaft is separately zoned.

Reason

Clarification: Zoning of fire alarm systems waives zoning requirements of 3.2.4.8.(1)(a) & (b). Where buildings are fully sprinklered and sprinklers are not individually zoned in shafts, heat detectors are required. They appear to be overlooked by many designers. Heat detectors are much less costly than provision of separate zoning of the sprinkler system.

Add appendix note to clarify that heat detectors are required at the top and bottom of shafts.

---

66 Code Reference **3.2.4.12.(1)** Related Proposals

Proposal number 311

Proposal

Add Clause 3.2.4.12.(1)(f) as follows:

(f) In *buildings* falling under Subsection 3.2.6. in lobbies to facilitate alternate floor recall of elevators.

Reason

To be consistent with the requirements of Canadian Elevator Code CAN 3-B44-85.

---

67 Code Reference **3.2.4.12.(1)** Related Proposals

Proposal number 310

Proposal

Add Clause 3.2.4.12.(1)(g) as follows:

(g) In buildings falling under Subsection 3.2.6. in elevator machine rooms.

Reason

To be consistent with the requirements of Canadian Elevator Code CAN3 -B44-85. The provisons for hearing impaired suites have been noted as omitted or overlooked by designers.

---

68 Code Reference **3.2.4.12.(2)** Related Proposals 183 thru 190

Proposal number 187

Proposal

Add Sentence 3.2.4.12.(2) as follows:

(2) Where a *two-level shelf and rack system* described in Article 3.2.2.16. exceeds 150 m2 in area, *smoke detectors* shall be installed on the underside of the intermediate deck/walkway level.

Reason

(See document #183-A thru F.)

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69 Code Reference **3.2.4.15.(4)** Related Proposals

Proposal number 92

Proposal

Add Sentence 3.2.4.15.(4) as follows:

{ Smoke detectors shall be provided at the recall level in elevator lobby, for recalling elevators to alternate level, in highrise buildings with unsprinklered recall level lobbies. }

(4) The signal to the elevators from the *smoke detector* "in Sentence (1)" shall be a separate zone and independent of all main recall floor pull stations

Editorial Note:- The first part of this proposal enclosed in { } is already covered by Sentence (1).

Reason

See document (2 Pages)

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70 Code Reference **3.2.4.17.** Related Proposals

Proposal number 295

Proposal

Amend Article as follows:

3.2.4.17. Manual Pull Stations A manual pull station shall be installed on every *floor area* near every required *exit* and near the principal entrance.

Reason

(1) To reflect human behavior, which is to exit via the same route used to access a floor area

(2) To retain a requirement in the current B.C. Building Code.

---

71 Code Reference **3.2.4.17.** Related Proposals — Proposal number **329**

Proposal

Delete Article and **substitute** as follows :

3.2.4.17. **Manual Pull Stations.** A manually activated signalling box shall be installed near every required *exit*, and near the principal entrance, so that in no case shall it be possible for an *occupant* of a *building* to leave to *floor area* without passing a manual alarm station.

Reason

(1) Many designers and contractors are taking great liberties in their interpretation of the word "near", in locating pull stations supposedly in compliance with Article 3.2.4.17.

(2) The proposed additional wording is quoted directly from the 1978 edition of ULC S524 (the wording is not in the current edition of ULC S524, presumably leaving it up to Building Codes to specify location).

---

72 Code Reference **3.2.4.21.(2)** Related Proposals 62 — Proposal number **61**

Proposal

Delete Sentence 3.2.4.21.(2) and **Substitute** the following:

(2) In areas where kitchens or bathrooms are located in the close proximity of the bedrooms, smoke alarms may be located inside each bedroom providing the smoke alarms are interconnected. (The activation of one alarm will cause all alarms within the dwelling unit to sound).

Reason

In most apartment suites the smoke alarms are subject to false alarms more frequently than normal, because of the close location of the steam from showers and cooking odors from the kitchen, in relation to the hallway. In a recent survey, done from several apartment blocks, the smoke alarm wires were disconnected or the batteries were removed due to excessive false alarms. In dwelling units under 1000 square feet smoke alarms located in the bedrooms may reduce the false alarms.

---

73 Code Reference **3.2.4.21.(2)** Related Proposals — Proposal number **315**

Proposal

Amend Sentence as follows:

Add at end :- (See also 3.7.3.17.(1)) (B.C.B.C.)

Reason

To alert designers to special requirements for suites for hearing impaired.

---

74 Code Reference **3.2.4.21.(6).** Related Proposals — Proposal number **314**

Proposal

Add Sentence as follows:

(6) Where *smoke alarms* are connected to a point of constant attendence within the *building* through connection to the fire alarm system they need not sound an alert or *alarm signal* in the *building*.

Reason

Clarification: Particularly in hotel occupancies, smoke alarms are often annunciated at the front desk to facilitate prompt and effective response to specific rooms. Some authorities have required alert or alarms to sound throughout the fire floor or throughout the building. This discourages provision of this feature in hotels and prevents disturbance to other guests. Since smoke alarms permitted to be locally sounded devices this feature should be retained.

---

75 Code Reference **3.2.5.** Related Proposals 12 — Proposal number **5**

Proposal

Add Article as follows:

3.2.5.1. **Fire Fighting Assumptions.** Where a *building* cannot fully comply with the basic fire fighting assumptions made in the code the *authority having jurisdiction* may require additional fire protection measures, such as *sprinklering*, to compensate for the deficiency.

(See A-3, Fire Fighting Assumptions, in Appendix A.)

Reason

A-3 Fire Fighting Assumptions. Paragraph 3, last sentence, considers sprinklers as an option, but does not give the Authority of requiring sprinklers. In many Municipalities because of response time, steep access and budget restraints for more Fire Halls and manpower, fire sprinklers would provide additional protection.

---

76 Code Reference **3.2.5.4.** Related Proposals — Proposal number **317**

Proposal

Delete heading and **substitute** as follows:

3.2.5.4. Roof Access and Roof Hydrants

Amend Article to be Sentence (1)

Add Sentence as follows:

(2) Roof hydrants are required for all *buildings* required to have roof access in Sentence (1) but these hydrants are not required to satisfy any pressure requirements providing they have a minimum 100 mm diameter feed through the standpipe system.

Proponent's note:- While location under Article is appropriate as it ties into roof access, inclusion as Sentence 3.2.5.10.(7) would not be completely out of place.

Reason

The requirements for roof hydrants are not clearly outlined in current provisions. The above will still allow the Fire Departments some discretion regarding the number and location of roof hydrants.

As street hydrants do not have pressure requirements it is not felt that roof hydrants should have high pressure needs providing they can transport a sizable (30-50 lps) of water.

Smaller pipe sizes would only be justified if the full 450 kPa requirement is met.

---

77 Code Reference **3.2.5.6.(1).** Related Proposals **Proposal number 3**

Proposal

Amend Sentence 3.2.5.6.(1). as follows:

(1) The access routes required by Article 3.2.5.5. shall be located so that the *building* face having the principal entrance and every access opening required by Articles 3.2.5.1. and 3.2.5.2. are located not less than 3 metres and not more than 15 metres from the closest portion of the access route required for fire department use, measured horizontally and at right angles from the face of the *building*.

Reason

In sprinklered buildings, direct access openings for fire fighting are not required, therefore, access routes to these openings are not required. Industry interprets 3.2.5.6. literally and only proposes access to within 15 metres of the principal entrance and usually from a dead end access and not an access parallel with the building face.

It would appear the intent of Section 3.2.2.6.(1) is that every building must face at least one street.

The first priority of the fire service on a response to a building fire is rescue (evacuation of the building), then extinguishment. Therefore, adequate fire fighting access to at least one building face must be provided, to allow for the rescue and fire fighting function. In order to meet this objective and to apply the Building Code uniformly, it is our opinion that the total building face having a principal entrance should be located 3 to 15 metres from the required access.

Where a building is required to face 2 or more streets or 50% - 75%
of the building perimeter located within 15 metres of the streets. Local appeal has allowed that portions of the building, 15 metres beyond the dead end fire fighting access to be included as a part of the 50% - 75% perimeter.

In our opinion the 6 metre required access should actually parallel the total 50% - 75% perimeter of the building face within 3 - 15 metres, therefore, this distance should be measured at right angles to the building face.

---

78 Code Reference **3.2.5.8.** Related Proposals 1 , 13, 20,44 **Proposal number 6**

Proposal

Delete Article 3.2.5.8. and **substitute** the following:

3.2.5.8. Water Supply. The water supply for fire fighting shall be provided for every *building* as per the Fire Underwriters Survey, latest edition of Water Supply for Public Fire Protection.

Reason

The existing Section 3.2.5.3. is too vague. An adequate water supply for fire fighting shall be provided for every building.

What is adequate?

---

79 Code Reference **3.2.5.8.** Related Proposals 1,6,13,20 **Proposal number 44**

Proposal

Delete Article 3.2.5.8. and **Substitute** the following:

Water supply for fire fighting shall be provided to every *building* in conformance with the appropriate municipal or regional regulations or in the absence of such regulations the NFPA 1231 "Standard on water supplies for suburban and rural fire fighting".

Reason

Many areas of B.C. do not have municipal type water systems capable of providing fire fighting water supplies to buildings and the present wording of 3.2.5.8. does not provide any guidance or minimum standards for code users.

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80 Code Reference **3.2.5.9.(1)(e)** Related Proposals 195 **Proposal number 194**

Proposal

Add Clause 3.2.5.9.(1)(e) as follows:

(e) except where *sprinklered* senior citizen apartments shall not be greater than 1/2 the area permitted in Table 3.2.5.A. (for Group C).

Reason

The installation of standpipes in senior housing would require fewer firefighters to perform suppression duties and make these firefighters available for quicker evacuation and rescue duties. By experience our department has responded to alarms in Senior Housing apartments and are overwhelmed by the percentage of occupants that require physical help to safely evacuate the building.

---

81 Code Reference **3.2.5.10.(6)** Related Proposals **Proposal number 318**

Proposal

Add Clause as follows:

(d) Pipes feeding 64 mm diam hose connections shall be minimum nominal 100 mm diam and pipes feeding 38 mm diam hose connections shall be minimum nominal 50 mm diam.

Proponent's note:- Also, references to 64 mm diam and 38 mm diam should be changed to "65 mm diam" and 40 mm diam".

Reason

Ingenious sprinkler design may result in very small piping feeding hose connections. This may be totally unsatisfactory for fire department use even if boosted.

Rounder numbers like 40 and 65 are more aesthetically pleasing and more accurate as schedule 40 steel pipe has a diameter of 40.9 mm for 1&1/2 inch pipe and lightwall 2&1/2 inch pipe has a diameter of 66.9 mm.

---

82 Code Reference **3.2.5.13.** Related Proposals

Proposal number 89

Proposal

Amend Sentence 3.2.5.13.(1) as follows:

(1) Except as provided in Sentences (2) **and** (3) to (5), where.....

Add Sentence 3.2.5.13.(5) as follows:

(5) When a sprinkler system is required, it is permitted to be designed, constructed, installed and tested in conformance with NFPA 13R, "Sprinkler Systems", where required in the following *residential occupancies:*

(a) Apartment *buildings*,
(b) Lodging and rooming houses,
(c) Board and care facilities (slow evacuation type with 16 or less occupants and prompt evacuation type),
(d) Hotels, motels and dormitories.

Add reference in Table 2.7.3.A:

Issuing Agency - NFPA
Document Number - 13R-1989
Title of Document - Sprinkler systems, residential occupancies up to four storeys in height
Code reference - 3.2.5.13.(5)

Reason

More specific standards are now available for the use of sprinklers in these types of properties.

This new standard specifically addresses the minimum level of fire protection requirements for sprinkler systems in low-rise residential construction It recognizes that based on a review of significant number of fire loss statistics there are areas within these buildings that need not be sprinkler protected. Also, it emphasizes the need for using the new quick response sprinkler technology for residential sprinklers.

With this new standard, the cost of installing the system is significantly reduced but without a subsequent increase in fire hazard or risk. This will encourage many owners to have such a system installed in their properties. The additional reference in the Code will clarify where the new standard can be used.

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83 Code Reference **3.2.5.13.** Related Proposals

Proposal number 110

Proposal

Add Sentences 3.2.5.13. (2) & (3) as follows:

(2) For Seismic Zones 2 to 6 , in addition to the main water supply, an automatically available secondary on site water supply shall be provided for all sprinkler systems and that secondary supply shall be equal to the hydraulically calculated sprinkler design demand for NFPA 13 systems, plus 375 litres per minute additional for a standpipe system, and have a duration of not less than the minimums set forth in Table 2-2.1(b) of NFPA 13,1989, "Installation of Sprinkler Systems".

(3) The requirements of Sentence (2) may be waived, provided fire protection relaxations, such as reduced *fire resistance rating* and increased *building heights* and/or areas, otherwise permitted when a *building* is *sprinklered*, are not applied. (See Appendix A.)

Re- number Sentences 3.2.5.13.(2) and (3) as (4) and (5).

Appendix

Add Sentence as follows:

A-3.2.5.13.(3) Because of the potential for earthquakes to disrupt municipal water service to buildings while at the same time increasing the potential for fire in that building, code requirement relaxations normally permitted where a sprinkler system is installed in a building shall only apply where the sprinkler system complies with Sentence 3.2.5.13.(2), i.e. an automatically available on-site water supply is provided for the sprinkler system. The reductions of fire resistance ratings, the increase of allowable building heights and/ or areas for combustible construction, and the permitted use of combustible materials in noncombustible buildings are typical of such relaxations. These are contained in the following Articles: 3.1.5.5., 3.1.8.6., 3.1.9.4., 3.2.2.11., 3.2.2.12., 3.2.2.13., 3.2.2.19., 3.2.2.20., 3.2.2.21., 3.2.2.24., 3.2.2.25., 3.2.2.26., 3.2.2.30., 3.2.2.31., 3.2.2.34., 3.2.2.35., 3.2.2.37., 3.2.2.39., 3.2.2.40., 3.2.2.41., 3.2.2.43., 3.2.2.44., 3.2.2.45., 3.2.2.47., 3.2.2.49., 3.2.2.51., 3.2.2.52., 3.2.2.53., 3.2.2.54., 3.2.2.57., 3.2.2.58., 3.2.2.61., 3.2.3.11., 3.2.5.13., 3.2.8.2., 3.3.1.1., 3.3.1.4., 3.3.1.7., 3.3.2.2., 3.3.2.5., 3.4.4.2., 3.5.2.1., 9.9.8.2., 9.9.8.5., 9.10.8.2., 9.10.9.15., 9.10.10.3., 9.10.10.6., 9.10.13.8., 9.10.14.6., and 9.10.19.2.

Reason

(See document 4 pages)

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84 Code Reference **3.2.5.13.** Related Proposals

Proposal number 325

Proposal

Delete Sentence and **substitute** as follows:

3.2.5.13.(3) Where a fire alarm system is required by Subsection 3.2.4. or has been provided and a water supply serves both a sprinkler system and a system serving other equipment, control valves shall be provided so that either system can be shut off independantly.

Add Sentence as follows:

3.2.5.13.(4) Where a fire alarm system has not been provided and a water supply serves both a sprinkler system and a system serving other equipment, separate control values shall not be provided for the sprinkler system.

Renumber existing Sentence (4) to (5)

Reason

Fire alarm systems will monitor the loss of water supply to a sprinkler system. Where no fire alarm system is provided other means of monitoring the water supply (i.e. loss of water supply to a water closet or other equipment) is very desireable. The proliferation of backflow devices in Vancouver with two isolation valves has compromised fire safety and another means of providing health safety must be provided.

---

85 Code Reference **3.2.5.17.(3).** Related Proposals

Proposal number 320

Proposal

Add Sentence as follows:

(3) Relaxations in NFPA 10 reducing the number of fire extinguishers in half where hose stations are provided shall be extended to all *sprinklered floor areas* whether or not hose stations are provided.

Editorial Note:- The proponent has been informed that the correct location for this requirement is the Fire Code.

Reason

It is assumed that current provisions eliminating the need for 1&1/2 inch hose will continue to be in effect. From a building occupants vantage the sprinkler system is far more effective in suppressing or controlling a fire than fire hose.

If a single fire extinguisher combined with the sprinkler system does not effectively control a fire the occupant should exit the area and leave the firefighting to trained, equipped fire fighters.

---

86 Code Reference **3.2.5.18.** Related Proposals

Proposal number 321

Proposal

Amend Article to be Sentence (1)

Add Sentence as follows:

(2) Wet pipe sprinkler and standpipe systems located in exterior walls or ceilings shall
(a) have sufficient insulation installed between the pipe and potentially freezing areas.
(b) have no insulation between the pipe and the heated space.
(c) where using blown in or similar insulation have barriers to prevent insulation from coming between the pipe and the heated space. and
(d) kept away from or protected from vents to outdoors.

Reason

More detailed guidlines are required to prevent freezing, particularly when sprinklering wood frame buildings.

---

87 Code Reference **3.2.6.9.(6)** Related Proposals 258 to 274

Proposal number 262

Proposal

Amend Sentence as follows:

Sentences 3.1.7.2. (1) to (6) (B.C.B.C.)

Delete and transfer requirements to the B.C. Electrical Code.

Reason

The Electrical Safety Act requires that electrical wiring, materials, and equipment be installed in accordance with the B.C. Electrical Code. The electrical trade should not have to refer to two codes.

---

88 Code Reference **3.2.6.14.(1).** Related Proposals

Proposal number 324

Proposal

Delete Sentence and **substitute** as follows:

(1) Electrical conductors used in connection with fire alarm systems and emergency equipment described in Articles 3.2.6.2 to 3.2.6.13 and 3.2.7 shall be protected from fire exposure from the *fire compartment(s)* with the source of power supply to the floor or *fire compartment* with the emergency equipment to ensure continued operation for a period of at least one hour. (See Appendix A).

Appendix

Add Sentence as follows:

A- 3.2.6.14.(1) Emergency service conduits shall be protected from non-emergency power conduits located in the same shaft. Separation from other low voltage communication lines is desirable . With equivalencies at least some passive protection should always be provided.

Reason

The above is consistent with current provisions and reduces ambiguities regarding branch circuits. The provision of one hour of protection will assist the Fire Department in their ability to conduct effective fire fighting operations and carry out life saving rescues . Providing a one hour rated separation would result in a large variation in the capacity of a system to perform in adverse conditions as it depends both on the type of wiring and emergency system as well as the method of protecting the conductors.

---

89 Code Reference **3.2.6.14.** Related Proposals 258 to 274

Proposal number 263

Proposal

Amend Article as follows:

Sentences 3.2.6.9. (1) and (2) (B.C.B.C.)

Delete electrical requirements and transfer these to Section 32 of the B.C. Electrical Code. The protection of conductors and installation methods are already covered by Section 32 of the B.C. Electrical Code.

Reason

The Electrical Safety Act requires that electrical conductors and other electrical materials be installed in accordance with the B.C. Electrical Code by certified electrical contractors. The electrical trade should not have to refer to two codes.

---

90 Code Reference **3.2.7.2.** Related Proposals 258 to 274

Proposal number 265

Proposal

Delete Article

Reason

This paragraph duplicates information in Rule 30-308 of the B.C. Electrical Code.

The Electrical Safety Act requires that lighting fixtures be in accordance with the B.C. Electrical Code.

The electrical trade should not have to refer to two codes.

---

91 Code Reference **3.2.7.4.** Related Proposals 258 to 274

Proposal number 266

Proposal

Amend Article as follows:

Sentences 3.2.7.3, (2) & (3) (B.C.B.C.)

Delete and transfer (2)(a) & (b) to the B.C. Electrical Code.

Reason

The emergency power supply must be installed by certified electrical contractors in accordance with the Electrical Safety Act.

The above rules duplicate 46-202 & 46-300 of the B.C. Electrical Code. The electrical trade should not have to refer to two codes.

---

92 Code Reference **3.2.7.5.** Related Proposals 258 to 274

Proposal number 269

Proposal

Delete Articles 3.2.7.5. and 3.2.7.6. (Sentences 3.2.7.4.(1) & (2)(B.C.B.C.))

Reason

These requirements already required under Electrical Safety Act (B.C. Electrical Code).

The installation of emergency power systems must be in accordance with the Electrical Safety Act, and certified contractors should use only electrical code.

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93 Code Reference **3.2.7.8.(6).** Related Proposals 258 to 274

Proposal number 264

Proposal

Amend Sentence as follows:

Sentences 3.2.6.10. (1) (B.C.B.C.)

Delete the voice communication power supply requirements and transfer these to the B.C. Electrical Code.

Reason

The Electrical Safety Act requires that electrical equipment be manufactured in accordance with the B.C. Electrical Code.

The electrical trade should not be required to refer to two codes for the same information, or for information regarding the same equipment.

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94 Code Reference **3.2.8.2.(1)** Related Proposals **Proposal number 287**

Proposal

Delete Subclause 3.2.8.2.(1)(c)(i) and **substitute** as follows:

(i) The aggregate area of *mezzanines* within the *fire compartment* is 500 m2 or less.

Reason

To prevent someone successfully challenging the 500 m2 limitation by placing 2 or more mezzanines side-by-side, as close as only 1 mm apart, where neither mezzanine exceeds 500 m2 in area, thereby not literally contravening the 500 m2 limitation in Clause 3.2.8.2.(1)(c)(i).

[This actually happened, so is not just hypothetical.]

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95 Code Reference **3.3.1.3.(10)** Related Proposals **Proposal number 302**

Proposal

Add Sentence as follows:

(10) No mirrors shall be placed in an *access to exit* in such a manner as to confuse the direction to an exit.

Reason

(1) It is just as important for mirrors not to confuse the direction of travel in an access to exit, as in an exit. (This is based on personal observation and experience.)

(2) For want of a separate code section dealing with matters common to access to exit and exit requirements (such as stairs, handrails, ramps, guards,etc.), I am restricted to suggesting the duplication of the Article 3.4.1.9 requirement in Section 3.3.

---

96 Code Reference **3.3.1.4.(1)** Related Proposals **Proposal number 219**

Proposal

Delete Clause 3.3.1.4.(1)(c) and **substitute** as follows:

(c) no *fire separation* is required where the *public corridor*

(i) is more than 5m in unobstructed width,

(ii) 3m in unobstructed width is maintained at all times adjacent and parallel to all rooms and *suites* that front onto the *public corridor*,

(iii) the *floor area* is *sprinklered*, and

(iv) the *public corridor* does not serve an *institutional occupancy* or a *residential occupancy*, and

(See document 2 pages)

Reason

Guideline No. 89-2 published by the Office of the Fire Commissioner indicates a minimum passage width of 3 m (10 feet) is acceptable for a public corridor in front of leased spaces (stores etc.).

3.3.1.4.(1)(c) States where a corridor exceeds 5 m in unobstructed width no fire separation is required, no reference is made to the 3 m in 3.3.1.9.(6).

The public corridors, which exceed 5 m in unobstructed width, except for permitted public activities (see Appeal No. 128), provided in large shopping complexes would require an unobstructed width of 5 m on either side of a kiosk or other permitted merchandising activities which generally prevents these types of permanent activities in a normal 9 m (30 feet) public corridor (mall).

The Fire Commissioner's Guidelines states 3 m is acceptable, which would not be in agreement with the requirements of 3.3.1.4.(1)(c).

If the Fire Commissioner's Guidelines are defendable then the B.C.B.C. should be changed to reflect these requirements and the provision to permit "open" store fronts in shopping malls with 3 m pedestrian walkways.

The suggested change would add clause (d) and renumber existing (d) to (e) to recognize the provisions of of Sentence 3.3.1.9. (6) regarding the maintenance of 3 m unobstructed width in front of stores for pedestrian travel but which does not reduce the rating or separation of store fronts.

The 3 m provision is required otherwise a clear unobstructed 3 m wide area in front of stores would not reduce the requirement for a fire separation even if a 5 m or wider public corridor was provided, unless it was completely unobstructed, it is not permitted to have a 3 m unobstructed width in front of the stores on either side of a public corridor (mall) with obstructions in the middle and add the two 3 m widths together to comply with the 5 m in 3.3.,1.3.(1)(c) 1990 NBC.

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97 Code Reference **3.3.1.4.(1)** Related Proposals **Proposal number 116**

Proposal

Add Clause 3.3.1.4.(1) (e) as follows:

(e) No *fire separation* is required between a *public corridor* and public washrooms, provided the *floor area* is *sprinklered* and the washroom(s) is separated from the remainder of the *floor area* by a *fire separation* having a *fire resistance rating* equal to that required for the remainder of the corridor.

Reason

As an improvement to Barrier Free Design it is highly desirable to delete doors to public washrooms (other than single toilet rooms) in order for wheelchairs to have easy access to washrooms without the hindrance of a door and self closing device. Also a door in a fire separation must have positive latching hardware, ie. push/pull and closer only are not permitted. The above amendment would eliminate this restriction.

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98 Code Reference **3.3.1.5.** Related Proposals — Proposal number **198**

Proposal

Delete Article 3.3.1.5.(B.C.B.C.) and **Substitute** as follows:

3.3.1.5. Except as exempted in Sentence 3.7.2.1.(2) areas of refuge shall be provided in conformance with Article 3.7.3.27.

Reason

The way 3.3.1.5. reads now is that all part 3 buildings (including apartments) require areas of refuge. If this is not the intent then reference to the exception (3.7.2.1.(2)) should be indicated in 3.3.1.5.

---

99 Code Reference **3.3.1.10.(1)** Related Proposals — Proposal number **327**

Proposal

Delete Sentence 3.3.1.10.(1) and **substitute** as follows:

(1) Except as provided in Article 3.3.1.11

(a) all doors in a *means of egress* shall swing on a vertical axis, and

(b) every door that provides *access to exit* from a room or *suite* having an *occupant load* of more than 60 persons or for a Group F, Division 1 occupancy, shall swing in the direction of *exit* travel.

Reason

(1) All doors in a means of egress should swing on a vertical axis, not just those doors singled out in the current sentence 3.3.1.10.(1).

(2) The present wording doesn't appear to cover doors from a room that is within a suite.

Overhead doors, for example, should not be permitted anywhere in a means of egress.

---

100 Code Reference **3.3.1.11.(3)** Related Proposals — Proposal number **207**

Proposal

Amend Sentence 3.3.1.11.(3) as follows:

(3) Movable *partitions* which are open during normal working hours and used to separate a *public corridor* from an adjacent Group D or E *occupancy* need not conform to Sentences (1) and 3.3.1.10.(1) provided the movable *partitions* are not located in a required *means of egress*

Reason

Should an emergency situation arise outside of normal working hours, but when occupants are still in the space, they could be left without a clear way out. This could occur during inventory or at closing time when everyone has not yet left, but staff close the door to prevent anyone else from entering.

In many cases, in small tenant areas, the movable partitions (store fronts) provide the only way out. There should always be a "man door" provided in the movable partitions, or a second way out.

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101 Code Reference **3.3.1.12.** Related Proposals — Proposal number **347**

Proposal

Add Sentence as follows :

(3) Electromagnetic locks that do not incorporate latches, pins or other similar devices to keep the door in a closed position are permitted, provided they are in conformance with Sentence 3.4.6.15.(4).

Reason

These are permitted on exit doors, so why not permit them on all doors in a means of egress?

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102 Code Reference **3.3.1.12.(1)** Related Proposals — Proposal number **134**

Proposal

Delete the following Clauses 3.3.1.12.(1)(a) & (b) and **substitute** :

(a) have a clear opening width of 815 mm,

(b) in a multiple leaf doorway have the active leaf providing an 815 mm clear opening.

Reason

Part of the Section 3.7 integration process. See also proposed addition to Sentence 3.7.3.8.(1) which refers to this Sentence. Multiple leaf doors are difficult for disabled persons to use unless they can pass through using just one leaf. It is also felt that all suite doors should provide access for the disabled.

This proposal also deletes the minimum leaf width of 610 mm because with at least one leaf being 815 mm clear there is no need to restrict the other leaf.

---

103 Code Reference **3.3.1.12.(1)** Related Proposals — Proposal number **349**

Proposal

Delete Clause 3.3.1.12.(1)(a) **substitute** as follows :

(a) have a minimun doorway width of 790 mm
[See also Clause 3.7.3.8.(1)(a)]

Reason

Twofold:

(1) To reconcile 3.3.1.12.(1) with 3.4.3.1.(2)(e).

The approach used in 3.3.1.12 is to refer to width of door, while that used in 3.4.3.1 is to refer to the doorway.

(2) To cross-reference 3.7.3.8.(1)(a), which will usually override, but not necessarily.

---

104 Code Reference **3.3.1.12.(1).** Related Proposals

Proposal number **341**

Proposal

Delete Sentence and **substitute** as follows:

(1) Every door that opens into or is located within a *public corridor* or other facility that provides *access to exit* from a suite shall

(a) *(unchanged)*
(b) *(unchanged)*
(c) *(unchanged)*
(d) *(unchanged)*

Reason

(1) It is just as important for all doors in an access to exit to have a specified minimum width, as doors "from a suite".

(2) Without the code being amended, it would literally not prohibit a door within a suite, but part of an access to exit, to be only 610 mm wide if it serve. an occupant load of 10 persons (governed only by Sentence 3.3.1.16.(3)).

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105 Code Reference **3.3.1.15.** Related Proposals

Proposal number **68**

Proposal

Delete Sentence 3.3.1.15.(11) and **Substitute** the following:

(11) Except as provided in Sentences (10) and (12), the width of *exit* stairs and stairs used by the public shall be in accordance with Sentence 3.4.3.1.(2) for *exit* widths.

Editorial Note:- The final location of this requirement will depend on location of B.C.'s stair requirements

Reason

This is to ensure that there is a minimum width for all stairs used by the public. Present Code only has minimum width for exit stairs - 3.3.1.15.(11) an primary stairs in dwelling units - 3.3.1.15.(12).

---

106 Code Reference **3.3.1.15.** Related Proposals 236 to 257

Proposal number **236**

Proposal

Amend Article 3.3.1.15. (B.C.B.C.) as follows:

Amend Table 3.3.1.15.A to require Type III to apply to all stairs in all Groups, delete Types I and II.

Amend Article editorially and provide an exception for riser heights in aisle stairs covered by 3.3.2.4.

Delete the following from Sentence (1) :
In every case the sum of two rises plus a run shall be not less than 550 mm nor more than700 mm.

Delete Sentence (5).

Amend Clause (9)(c) to address the deletion of Type II stairs.

Editorial Note:- In the event of adoption of this proposal this entire Article will require to be revised.

Reason

This proposal reflects extensive research on stair safety and the growing cost of injuries. The cost of falls on stairs - especially in residential settings - exceeds the cost of construction and injury costs are rising faster than the cost of construction. U.S. model codes and standards, including standards for barrier-free design, call for the Type III step geometry. The direction being taken in the U.S. is for this standard to apply even to dwellings. There are no good technical or economic reasons to have a different standard in dwellings. Furthermore, the rule about the sum of two rises and the run is not always valid and has been dropped in U.S. model codes and standards.

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107 Code Reference **3.3.1.15.** Related Proposals 236 to 257

Proposal number **237**

Proposal

Amend Sentence 3.3.1.15.(15) (B.C.B.C.) to allow an exception for aisle stairs.

Editorial Note:- This is a partial duplication of proposal 236. In the event of adoption of this proposal this entire Article will require to be revised.

Reason

There is not a good technical basis generally for the 3.7 m limitation for rise of a stair. Detailed studies of aisle stairs (especially in Edmonton as part of the study leading to the film, "The Stair Event") show that the length of aisle stairs is not a safety hazard if the stairs are properly constructed (including handrails, for example).

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108 Code Reference **3.3.1.15.(2).** Related Proposals

Proposal number **344**

Proposal

Amend Article 3.3.1.15.(2) (B.C.B.C.) as follows:

(2) Except for the run as provided in Sentences (7) and (9), all steps within a flight shall be uniform in rise and run, with a maximum variation of 5 mm between the largest and smallest rise or run, and shall not alter significantly in run and rise in successive flights in any stair system.

Reason

(1) To prevent abrupt, or even significant, changes from one flight to another.

Especially for a person making use of exit stairs, it is desireable to keep a certain rythm throughout the path of travel, rather than to readjust their thinking at each different flight.

(2) This is not an unreasonable requirement. It is a requirement of long standing in the NBC, currently in Sentence 3.4.6.7.(3) of the 1990 edition.

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109 Code Reference **3.3.1.16.** Related Proposals 236 to 257

Proposal number **238**

Proposal

Delete Sentence 3.3.1.16.(5) and **substitute** as follows:

(5) Except as provided in 3.3.1.16.(6) and (7), the required width of stairs in access to exit shall be based on not less than 9.2 mm per person.

Reason

With Section 3.3 providing capacity for all other circulation facilities, there is no reason for not including the capacity rule for stairs here instead of having another cross reference in the Code. The proposed new Sentences 3.3.1.16.(6) and (7) are covered in accompanying proposals.

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110 Code Reference **3.3.1.16.(5).** Related Proposals

Proposal number **350**

Proposal

Amend Sentence as follows :

(5) Stairs in an *access to exit* shall conform to the requirements for stairs in Article 3.4.3.5. **(See Article 3.3.1.9. for minimum widths in an *access to exit*)**

Reason

(1) The reference to Article 3.3.1.9 seems irrelevent to the stair requirements in sentence 3.3.1.16.(5). Article 3.3.1.9 deals only with corridors.

(2) If the reference to Article 3.3.1.9 was intended to apply to the whole of Article 3.3.1.16, it is not complete enough. Article 3.3.1.16 deals with doorways, corridors, passageways, ramps & stairs

(a) the minimum width of doors is governed by Sentence 3.3.1.12.(1) [not 3.3.1.9].

(b) the minimum width of corridors is governed by 3.3.1.9 [but is the only one].

(c) passageways and ramps are governed by Article 3.3.1.13.

(d) stairs are governed by the reference to Article 3.4.3.5 in Sentence 3.3.1.16.(5) and by the references in Sentence 3.3.1.13.(1).

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111 Code Reference **3.3.1.16.** Related Proposals 236 to 257

Proposal number **239**

Proposal

Add Sentence 3.3.1.16.(6) as follows:

(6) The required width of stairs with risers no higher than 180 mm and runs of at least 280 mm shall be based on not less than 8 mm per person.

Reason

This proposal reflects the improved egress capacity performance of stairs with better riser-tread geometries and follow U.S. model codes and standards which credit better geometries with better egress capacity. An alternative approach is simply to provide an exception referring directly to NFPA 101 or NFPA 101M which provide a great deal of detail on this matter of egress capacity/width and step geometry. If this proposal is not accepted, a case-by-case determination could be made by the official on the basis of equivalency of egress performance based on accepted technical standards.

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112 Code Reference **3.3.1.16.** Related Proposals 236 to 257

Proposal number **240**

Proposal

Add Sentence 3.3.1.16.(7) as follows:

(7) For Group A, Division 4 occupancies, reduced egress widths are permitted in accordance with Sentence 3.3.2.9.(4).

Reason

This is one option for dealing with the reduced egress width rules for Group A Division 4 occupancies which are addressed in an accompanying proposal on 3.3.2.9.(4). Another option is to state the egress requirement directly here instead of adding yet another cross reference. Proposing its location in 3.3.2.9.(4) is done because of the complex nature of the conditions which might justify the drastic reduction of egress widths allowed for Group A, Division 4.

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113 Code Reference **3.3.1.17.(1)** Related Proposals

Proposal number 278

Proposal

Amend Sentence as follows:

(1) Except for the front edge of stages and loading docks, a *guard* not less than 1070 mm high shall be provided.....

Reason

There is no provision in the present code for these practical and virtually universal exceptions. Technically they contravene the building code if they are more than 600 mm high and don't have guards.

(Note: It is not proposed to limit "stages" to the defined term.)

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114 Code Reference **3.3.2.3.** Related Proposals 236 to 257

Proposal number 241

Proposal

Amend Articles 3.3.2.3. and 3.3 2.4. as follows:

In Articles 3.3.2.3. and 3.3.2.4. add exceptions for seating arrangements and aisles complying with NFPA 101-1988, In a new appendix to these Articles add the comment that seating arrangements and aisles complying with NFPA 101-1988 provide acceptable performance in terms of egress time and safety generally.

Editorial Note:- In the event of adoption of this proposal these Articles would require to be revised by adding Sentences to cover this exception.

Reason

NFPA 101 has, since the 1988 edition, provided extensive requirements -- based on two decades of research in Canadian assembly facilities. The 1991 edition of NFPA 101 will provide even greater detail on assembly means of egress including new requirements where there are arrangements of tables and seating. The NFPA 101 requirements permit much greater flexibility in layout of seating and aisles without sacrificing safety. In fact, some of NFPA's requirements provide safety not achieved with the existing BCBC and NBCC requirements. Rather than introduce this extensive system into the British Columbia Building Code, it is easier simply to provide the proposed explicit reference to NFPA 101-1988 in a new set of exceptions to 3.3.2.3 and 3.3.2.4.

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115 Code Reference **3.3.2.4.(2).** Related Proposals 236 to 257

Proposal number 242

Proposal

Delete Sentence and **substitute** as follows:

(2) The minimum clear width shall be not less than 1200 mm in the case of aisles with steps and 1100 mm for other aisles, except that the clear width can be reduced to not less than

(a) 750 mm when serving not more than 60 seats,
(b) 900 mm when serving seats on one side only, and
(c) 585 mm between a handrail or guardrail and seats where this clear width does not extend more than five rows to where a wider clear width is provided such as at a gap between successive portions of center-aisle handrail as required by Sentence (11)

Reason

This takes into account the special case of an aisle divided in half by a beneficial center-aisle handrail or the case of an small stub aisle at the side of a vomitory where a guard is provided. The proposal is consistent with U.S. model codes and standards which are based on extensive Canadian research into assembly aisles.

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116 Code Reference **3.3.2.4.(3).** Related Proposals 236 to 257

Proposal number 243

Proposal

Amend the last part of Sentence 3.3.2.4.(3) as follows :

. . . and shall be increased by 25 mm for each metre of distance toward the *exit*, cross aisle or foyer, as necessary to provide adequate capacity for the number of people utilizing the particular portion of the aisle for egress, except that, if egress is possible in each direction, the increased width shall be uniform over the entire aisle length.

Reason

This proposed requirement is performance oriented (unlike the often-ignored, existing requirement) and it takes into account the potential need, in some aisles, for the direction of egress to be reversed if one of two normally usable ends is temporarily blocked. The proposal is consistent with U.S. model codes and standards.

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117 Code Reference **3.3.2.4.(4).** Related Proposals 236 to 257

Proposal number 244

Proposal

Delete Sentence 3.3.2.4.(4) and **substitute** as follows:

(4) Aisles shall terminate in a cross aisle, foyer, doorway, vomitory, or *exit*, the width of which provides at least the required egress capacity of the aisles it serves.

Reason

This proposed requirement is performance oriented (unlike the existing requirement) and provides for a balance system of egress widths and capacities. The proposal is consistent with U.S. model codes and standards.

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118 Code Reference **3.3.2.4.(9).** Related Proposals 236 to 257 **Proposal number 246**

Proposal

Amend Clause (c) as follows:

(c) the riser height is not more than 200 mm, 180 mm unless sight line considerations demand a steeper slope in which case, to maintain adequate tread runs of at least 280 mm, the riser height can exceed 180 mm but shall not exceed 230 mm.

Amend Subclause (d) (i) as follows:

(i) the heights of adjacent risers do not vary by more than 6 mm, and 5 mm unless a distinctive hazard marking stripe, visible in both ascent and descent, is provided at the nosing of treads adjacent to the nonuniform risers.

Delete Subclause (ii).

Delete Clause (e) and **substitute** as follows:

(e) all treads within the aisle shall have a uniform run of at least 280 mm with a construction tolerance of no more than 5 mm between adjacent treads.

Reason

This proposed revision is consistent with changes made in recent years to U.S. model codes and standards based on Canadian research on people movement in aisle stairs. The proposal on riser height and nonuniformity reflects unavoidable conditions caused by sightline considerations and provides countermeasures. The proposal on uniform tread depth is based on the recommendations of researchers on stair safety. Note that the traditional practice of making the tread larger, at the row level, is unjustified and causes a hazard.

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119 Code Reference **3.3.2.4.(11)** Related Proposals 236 to 257 **Proposal number 245**

Proposal

Add Sentence as follows:

(11) In aisles containing steps, handrails shall be provided at either one side or at the centerline of aisles in which case the handrails shall have gaps measuring 550 mm to 900 mm horizontally, provided at least at five-row intervals, and the handrail terminations at such gaps shall have rounded bends.

Reason

This proposed requirement is based on two decades of research in Canadian assembly facilities and has become a feature of leading U.S. model codes and standards. Steps in aisles pose difficulties and safety hazards that justify handrails just as are required on any other stairs. Indeed, the Canadian research shows that handrails in aisle stairs have an degree of usage significantly higher than observed on other stairs where handrails are currently required. The message from aisle users is very clear. This point is also made in the documentary film, "The Stair Event".

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120 Code Reference **3.3.2.8. (1)** Related Proposals 236 to 257 **Proposal number 247**

Proposal

Amend the last part of Clause (a) as follows:

. . . and not less than 920 mm **when located** at the end of aisles or and not less than 1070 mm at the foot of steps, in each case measured above the closest adjacent walking surface.

Reason

This proposal is consistent with U.S. model codes and standards in relation to assembly aisles and it reflects the greater hazard of falls on steps, hence the need for extra height protection at the foot of steps. The height of 1070 is based on anthropometrics in relation to guards and is consistent with Sentence (2) of this Article.

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121 Code Reference **3.3.2.9.** Related Proposals 236 to 257 **Proposal number 250**

Proposal

Delete Clauses 3.3.2.9.(5)(b) and (c) and **substitute** as follows:

(b) shall be in accordance with Article 3.3.2.4. except as provided for bleachers in Article 3.3.2.10.

Delete Sentence 3.3.2.9.(6)

Reason

An accompanying proposal suggests improvements to 3.3.2.4. which permits its application to all assembly aisles including those in Group A, Division 4 occupancies. There is no justification for having a less demanding standard for aisle step geometry in Group A, Division 4 occupancies; such aisles serve more people under more demanding conditions.

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122 Code Reference **3.3.2.9.(3) (NBCC).** Related Proposals 236 to 257 **Proposal number 248**

Proposal

Delete Sentence 3.3.2.9.(3).

Reason

This requirement has never made any sense, especially since many facilities with Group A, Division 4 occupancies do not have true exits in the sense of separated means of egress; hence there might be nothing to measure. This requirement has been interpreted as applying to vomitories; however, in this case, Sentence (2) handles the matter of spacing and Sentence (1) governs the number of exits which are interpreted as major ramp or stair systems between concourses and the ground level.

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123 Code Reference **3.3.2.9.(4)** Related Proposals 236 to 257 Proposal number 249

Proposal

Delete Sentence and **substitute** as follows:

(4) The capacity of *means of egress* for Group A Division 4 *occupancies* shall be in accordance with Article 3.3.1.16. except that, if acceptable written evidence is provided that no part of the means of egress will be subject to blockage from smoke or fire and that other life safety hazards, including those arising from large numbers and densities of occupants and longer egress times, the required width of *means of egress* shall be based on not less than 2.4 mm per person for stairs and not less than 1.8 mm per person for other egress elements.

Reason

This proprosed change addresses the misapplication of the Group A Division 4 requirements in amny large assembly buildings in Canada. It parallels major changes made in the last few years in one U.S. model code and in NFPA 101 and NFPA 102 to address what is called "smoke-protected assembly seating." In fact, an appendix notes would be most appropriate referring designers and managers of Group A Division 4 facilities to NFPA 101-1988 or NFPA 101-1991 for the additional detail provided there on "smoke-protected assembly seating" and the "life safety evaluation" which it calls up. NFPA 101, for example, provides for a range of egress capacity values depending on facility size.

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124 Code Reference **3.3.4.4.(2).** Related Proposals Proposal number 60

Proposal

Amend Sentence 3.3.4.4.(2) as follows:

(2) Except as provided in Sentence (3) and (4), and in Subsection 3.4.2.2.(2), every *dwelling unit* .....

Reason

The B.C. Building Code Appeal Board has ruled that 3.4.2.1.(6) (1985 B.C.B.C.) is a direct exception to this requirement. See Appeal No. 1079. Rewording should clarify this exception.

(See documents #60-A thru C)

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125 Code Reference **3.3.4.9.** Related Proposals Proposal number 35

Proposal

Add Article as follows:

3.3.4.9. Doorway Sizes. Doorway sizes within *dwelling units* shall conform to Part 9.

Reason

Washroom doors in dwelling units have the same use in a building classified under Part 9 of the Building Code as a building classified as a Part 3 building. However, the requirement for at least one washroom door to be 760 mm is specified for Part 9 buildings only.

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126 Code Reference **3.3.5.10** Related Proposals Proposal number 2

Proposal

Add Article as follows:

3.3.5.10. Multi-Tenanted Storage Warehouses. Where a Group F *major occupancy* is used as a multi-tenanted storage warehouse, the *building* shall be *sprinklered*.

Reason

The present code permits multi-storey "mini-warehouses" (F-2 classification) which offer the public secure self-storage. These facilities are not required to have rated fire separations between units or between the corridors and the units. Nor are these facilities accessible to fire service personnel for routine inspections. Consequently, hazardous materials (paint, solvent, gas, propane, etc.) which are often stored in these units represent an unseen hazard to the tenants and to firefighters who may be called upon in an emergency. Mandatory sprinklers would offset this hazard.

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127 Code Reference **3.3.5.10.** Related Proposals 183 thru 190 Proposal number 188

Proposal

Add Article as follows:

3.3.5.10. Two-level Shelf and Rack System

(1) A *two-level shelf and rack system* described in Article 3.2.2.16. shall not

(a) be located in a Group F, Division 1 *major occupancy*, or

(b) be used for manufacturing/production activities.

(2) The unobstructed width of an aisle in a *two-level shelf and rack system* shall be not less than 760 mm.

(3) At least two *means of egress* shall be provided from the intermediate deck/walkway level of a *two-level shelf and rack system*.

Reason

(See document #183-A thru F.)

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128 Code Reference **3.3.8.10.** Related Proposals — Proposal number 335

Proposal

Amend Article 3.3.8.10. (B.C.B.C.) as follows:

In *buildings of residential occupancy*, all exterior windows with sliding sash which are located within 5 m of finished ground or exterior corridors or decks or balconies common to more than one *dwelling unit* shall be installed in such a manner that the sliding sash cannot be removed from their frames when in the locked position. Such windows shall be provided with a positive locking mechanism.

Reason

I may not have all the contingencies provided for in the rewording proposed above, so feel free to amend it during the code change process.

Even before the requirements of Article 3.3.8.10 were finalized for the current edition of the BCBC there seemed to be unanimous agreement (including staff of the Building Standards Branch) that there is just as much a security concern above all commonly accessible "ladder platforms" as above finished ground.

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129 Code Reference **3.4.1.** Related Proposals — Proposal number 296

Proposal

Add Article as follows:

3.4.1.?. Principal Entrance The principal entrance of a *building* shall be designed as an *exit*

Reason

(1) The Building Code does not yet adequately reflect human behavior

(2) Human behavior is to exit via the same route a person used to access a portion of a floor area.

(3) One step was taken towards reflecting human behavior in the current edition of the B.C. Building Code, by requiring a fire alarm pull station at a principal entrance, whether or not the principal entrance is an exit. (Ref. 3.2.4.12.)

(4) I am proposing to take another step in this direction, albeit limited to the principal entrance (and not to all storeys, yet.)

---

130 Code Reference **3.4.2.3.** Related Proposals 183 thru 190 — Proposal number 189

Proposal

Add Article as follows:

3.4.2.3. Two-level Shelf and Rack System Exiting

(1) When the intermediate deck/walkway level of a *two-level shelf and rack system* described in Article 3.2.2.16. exceeds 150 m2, at least one of the *means of egress* required by Sentence 3.3.5.10.(3) shall be an *exit*.

(2) When the intermediate deck/walkway level of a *two-level shelf and rack system* described in Article 3.2.2.16. exceeds 450 m2, both of the *means of egress* required by Sentence 3.3.5.10.(3) shall be *exits*.

(3) The *exits* required in Sentences (1) and (2) shall be separated from the *two-level shelf and rack system* and from the remainder of the *building* by a *fire separation* having a *fire resistance rating* of not less than 45 min.

Reason

(See document #183-A thru F.)

---

131 Code Reference **3.4.3.1.(2)** Related Proposals — Proposal number 348

Proposal

Amend Clause 3.4.3.1.(2)(e) as follows :

(e) 790 mm for doorways not serving patients' sleeping rooms.
[See also Clause 3.7.3.8.(1)(a)]

Reason

To cross-reference 3.7.3.8.(1)(a), which will usually override, but not necessarily.

---

132 Code Reference **3.4.3.1.(2)(e)** Related Proposals — Proposal number 133

Proposal

Amend Clause 3.4.3.1.(2)(e) as follows:

(e) **790 mm** 815 mm for doorways.....

Appendix

Amend the last line of A-3.4.3.1.(2) as follows:

.....and **810mm** 900mm doors in Clause (e).

Reason

To be consistent with proposed change to 3.3.1.12.(1) which endeavours to make access to exit doorways accessible.

---

133 Code Reference **3.4.3.5.** Related Proposals 236 to 257 **Proposal number 251**

Proposal

Delete Article 3.4.3.5. and **substitute** as follows:

3.4.3.5. Exit Capacity *Exit* capacity and *exit* width shall comply with the requirements given in Article 3.3.1.16. for capacity and width of *access to exits.*

Reason

This is proposed to help put into one place all of the requirements linking egress capacity and width. Some additional editorial changes, beyond what is proposed here, might be required to complete this rationalization of the Code.

---

134 Code Reference **3.4.3.7.(2).** Related Proposals **Proposal number 64**

Proposal

Amend Sentence 3.4.3.7.(2). as follows:

(2) The headroom clearance for stairways measured vertically above any landing or the nosing of any stair tread shall be not less than **2050mm** 2000 mm.

Editorial Note:- The proponent has indicated that a similar change should be made to 9.8.4.4. for Part 9.

Reason

This is to clarify the issue of headroom clearances regarding access to exit and exit stairs, landing and corridors; presently there are three dimensions 1.95 m, 2.00 m and 2.05 m and also to be consistent with the 2000 mm clearance requirement for stairs in 3.3.1.15.(13). the headroom clearance over all stairs and landings will now be 2000 mm in both Part 3 and Part 9.

---

135 Code Reference **3.4.4.2.(2)** Related Proposals **Proposal number 228**

Proposal

Amend Sentence 3.4.4.2.(2) as follows:

(2) Where more than one *exit* is required from a *floor area* or *suite* as described in Article 3.3.1.1. not more than one exit **from a floor area** is permitted to lead through a lobby provided

(a) etc . . .

Reason

The present requirements restricts separate tenant areas (suites) requiring more than one exit from exiting through a lobby.

With an open floor plan of the total floor area, requiring more than one exit, the present requirement is correct.

Where the floor area is separated into two separate tenant area (suites) and each tenant are required a minimum of two exits, which would be a total of four required exits from the overall floor area, only one of the exits from one of the tenant areas could exit through a lobby.

It seems just as safe to allow one of the required exit from each tenant area to exit through a lobby, as it is to allow one of the required exits from a floo area.

The additional item this change will affect is that it is the opinion of some code users that if a floor area required only one exit from a floor area, then that one exit can exit through a lobby.

This does not seem to be a logical interpretation to comprise the only exit from a floor area.

The suggested change will not allow this.

---

136 Code Reference **3.4.4.2.(2)(b)** Related Proposals **Proposal number 208**

Proposal

Amend Clause 3.4.4.2.(2)(b) as follows:

(b) the path of travel through the lobby to the outdoors

(i) **is not more than** does not exceed 15 m, and

(ii) when located within an interconnected floor space as permitted in Sentence (d) is measured from the bottom of the stairs.

Reason

In a 2 storey building with an interconnected lobby it is difficult to determine where the lobby starts and ends. Currently the travel distance permitted is not being interpreted uniformly.

---

137 Code Reference **3.4.4.4.(1)** Related Proposals **Proposal number 197**

Proposal

Amend Clause 3.4.4.4.(1)(b) as follows:

After " piping " **Insert** other than standpipes.

Reason

There is a contradiction between the code and N.F.P.A. 14 (3-3.1) as to the location of standpipes. The code doesn't want them penetrating contiguous (scissor) stairs, but N.F.P.A. does and installation is supposed to be as per N.F.P.A.14

---

138 Code Reference **3.4.5.1.** Related Proposals **Proposal number 293**

Proposal

Add Sentence as follows:

(7) When a *building* is required to have a fire alarm system, the illumination of *exit* signs shall be activated to flash off and on when the fire alarm system is activated.

Reason

(1) The location of exit signs is often not obvious. One example is a shopping mall with other illuminated signs of the same colour which will likely be larger than the exit signs, and with a higher lighting level, and "overwhelm" the exit sign.

(2) Frequently, one may first find a door, and then look for an exit sign at it to determine if it is an exit door or not. It would be better for the signage to direct a person to the exit door in the first place.

(3) To lend some urgency to evacuation when the fire alarm system goes off.

(4) To make it easier to find exits.

---

139 Code Reference **3.4.5.1.(1)** Related Proposals **Proposal number 297**

Proposal

Delete Clause 3.4.5.1.(1)(a) and **substitute** as follows:

(a) A *building* one *storey* in *building height*, unless it is a two *storey building* with the area of the second *storey* not exceeding 300 m2.

Reason

(1) Regardless of the height of a building, the exits should be clearly identifiable.

(2) The Code currently exempts two storey high buildings (which could contain over two storeys), regardless of the "floor area" (provided the occupant load of the building does not exceed 150 persons).

Below a floor area of 300 m2 the exits would likely be obvious (although not necessarily. I would not be adverse to requiring exit signs in all buildings two storeys or more in height, but proposed an area of 300 m2 if two storey high buildings are to continue to be exempt. The 300 m2 is consistent with the 300 m2 floor area being proposed for some Section 3.7 amendments.)

---

140 Code Reference **3.4.5.1.(2)** Related Proposals **Proposal number 300**

Proposal

Amend Clause 3.4.5.1.(2)(b) as follows:

Delete the words **"exit or sortie"**, and **substitute** "exit or exit and sortie"

Reason

(1) Without the proposed change, exit signs could read only "sortie".

British Columbia is not bilingual to the degree that that would be reasonably universally understood.

(2) To restore what is in the current edition of the B.C. Building Code.

---

141 Code Reference **3.4.5.1.(3)(b)** Related Proposals **Proposal number 180**

Proposal

Amend Clause 3.4.5.1.(3)(b) as follows:

(b) White letters on a red background or red letters on a **white** contrasting background, with **the** letters not less than 150 mm high and having a 19 mm stroke, when the sign is externally illuminated.

Reason

The NRC in its bulletin headed "SECOND REVISIONS TO THE 1985 NATIONAL BUILDING CODE", recognized the validity of the use of ". . . exit signs that emit a greenish colour from the lettters." Our proposal, while retaining the requirement for red letters, acknowledges the acceptability of the light green of the photoluminescent vinyl on which the letters are printed.

---

142 Code Reference **3.4.5.1.(5).** Related Proposals **Proposal number 299**

Proposal

Amend Sentence as follows:

(5) Where necessary, signs shall be provided to indicate the direction of egress **in *public corridors* and passageways,** whether or not *exit* signs are required in accordance with sentence (1), and shall have the word EXIT or EXIT and SORTIE with a suitable arrow or pointer indicating the direction of egress, and the size of lettering shall conform to Sentence (3).

Reason

(1) The location of exits should be obvious, and routes thereto.

(2) Even though a building may not require exit signs over or adjacent to exits, the route to get there should still be signed if they are not visible or obvious.

(3) Deleting reference to "public corridors & passageways" is deliberate. This requirement is just as important for corridors used by the public (as differentiated from public corridors), for example. Even where the "public" is not involved, it should also be a requirement in a persons place of employment, as there could be new emplyees, visitors, and persons with limited mental capacity.

---

143 Code Reference **3.4.6.1.(1)** Related Proposals 236 to 257 **Proposal number 252**

Proposal

Delete Sentence 3.4.6.1.(1) and **substitute** as follows:

(1) Interior and exterior landings and ramps accessible to the public shall have a slip-resistant finish (See A-3.3.1.15. (14) in Appendix A.)

Editorial Note:- This is the current wording of Article 3.4.7.2. (B.C.B.C.)

Add at the end of Sentence A-3.3.1.15.(14) as follows:

The addition of slip resistant or friction strips to walking surfaces may cause more problems than are solved. Surface adherence is problematic and tripping hazards might develop over time even if there is no tripping projection when first installed. Also, on stair treads, the strips will cause visual confusion about tread nosing location unless the edge of the strip is immediately at the nosing. In all cases, it is preferable to provide uniform slip resistance across the entire walking surface of ramps and entire surface of stair treads.

Reason

In addition to what is suggested by the proposed appendix note, the point could also be made that slipping is not a major factor in stair accidents. Indeed, any surface that is satisfactory for level flooring is more than satisfactory for stair treads where horizontal forces of footfalls are less than in level walking.

144 Code Reference **3.4.6.4.(2)** Related Proposals 236 to 257 **Proposal number 253**

Proposal

Delete Sentence 3.4.6.4.(2) and **substitute** as follows:

(2) Handrails shall be provided within 760 mm of all required portions of stair width.

Reason

This is based on Canadian research into actual handrail use in public assembly facilities. It is also based on related anthropometric studies. The 760 mm criterion will make sure that everyone required to be on a stair (especially in an egress situation) will be within reach on a handrail. The criterion is based on a average 600 mm reach distance for adults and, in a crowd, an average 160 mm overlap of the staggered files of people. The existing allowance of 2200 mm leaves many people within the required width of a stair, beyond the reach of one handrail. This proposed change is consistent with U.S. model code changes and NFPA 101.

145 Code Reference **3.4.6.4.(3)** Related Proposals 236 to 257 **Proposal number 254**

Proposal

Delete Sentence and **substitute** as follows:

(3) Handrails shall be continuously graspable along their entire length and shall have either:
(a) a circular cross section with an outside diameter of at least 30 mm and not greater than 50 mm, or
(b) any other shape with a perimeter dimension of at least 100 mm, but not greater than 157 mm and with the largest cross-section dimension not exceeding 57 mm.
(See Appendix A)

Amend Sentence A-3.4.6.4. (3) as follows:

Delete the last sentence.

Reason

This reflects research conducted in Canada (e.g., NRCC 29401) and elsewhere on handrail graspability. The proposal is also similar to what U.S. model codes and NFPA 101 have adopted. (NRCC 29401 is titled, "Influence of handrail shape, size, and surface texture on the ability of young and elderly users to generate stabilizing forces and moments" by B.E. Maki for the NRCC Division of Electrical Engineering in 1985; printed in 1988.)

146 Code Reference **3.4.6.4.(4)** Related Proposals 236 to 257 **Proposal number 255**

Proposal

Delete Sentence and **substitute** as follows:

(4) Required handrails, measured vertically from a line drawn through the outside edges of the stair nosing or the surface of the ramp, floor or landing, shall be not less than 865 mm and not more than 965 mm, except that a maximum height of 1070 mm is permitted in the case of *guards* providing a handrail meeting the graspability requirements of Sentence (3).

Reason

This reflects research conducted in Canada (e.g., NRCC 29399 and 29400) on handrail height for function as well as preference. The proposal is also similar to what U.S. model codes and NFPA 101 have adopted based on these studies. (NRCC 29400 is titled, "Influence of handrail height and stairway slope on the ability of young and elderly users to generate stabilizing forces and moments" by B.E. Maki for the NRCC Division of Electrical Engineering in 1985; printed in 1988.)

147 Code Reference **3.4.6.4.(5)** Related Proposals 236 to 257 Proposal number **256**

Proposal

Delete Sentence and **substitute** as follows:

(5) At least one handrail shall be continuous throughout the length of all flights and landings, except where interrupted by doorways. (See Appendix A.)

Add at the end of Sentence A-3.4.6.4.(5) as follows:

It is preferable to provide a continuous handrail, not interrupted by newels, on the side of the stair providing the shortest path of travel. The center handrail of a dogleg stair is an example.

Reason

A newel post is a severe disruption to continuity of handrail graspability. The proposed change reflects changes made in U.S. model codes and NFPA 101. It arises from stair safety research underlining the importance of continuity of handrail graspability especially at the beginning and end of a flight of steps.

---

148 Code Reference **3.4.6.4.(5).** Related Proposals Proposal number **343**

Proposal

Delete Sentence and **substitute** as follows :

(5) At least one handrail shall be continuous throughout the length of the stairway, including landings, additional handrails may be interrupted in their continuity at doorways.

Reason

Twofold:

(1) If there is only one handrail, as permitted in sentence 3.4.6.4.(1), it should be continuous. As presently worded, sentence (5) would permit the handrail to go on the "outside". It would be discontinuous at each doorway. This does not meet the intent of the code, to have at least one continuous handrail.

(2) To prohibit newel posts on handrails required to be continuous. According to Jake Pauls, the main wear on handrails is observed at changes in direction, which is where there is the main need for continuity (or at least that is what I understood him to say at a "seminar" in Vancouver last year).

(3) Newel posts interupt continuity, just as much as mounting brackets could if done improperly.

---

149 Code Reference **3.4.6.4.(9)** Related Proposals 236 to 257 Proposal number **257**

Proposal

Add Sentence as follows:

(9) Handrails and their brackets or other supporting structures shall be designed, constructed, and installed to resist, without a deflection exceeding 50 mm

(a) a concentrated load of 0.9 kN applied in any direction, and

(b) except in *dwelling units*, a concurrently applied distributed load of 0.75 kN/m applied in any direction.

Reason

Canadian building codes have long needed a requirement on structural requirements for handrails. Right now, a cardboard handrail could conceivably be installed, held by staples to a wall. The proposal is based on what the U.S. Board for the Coordination of the Model Building Codes recommended in 1986 and is not too dissimilar from existing guard requirements (in Article 4.1.10.1) for residential units. This proposed change will also clear up the problem that has occurred in some Canadian buildings where handrails were regulated by guard structural requirements, with the result that dysfunctional, large sections were employed that reduced the handrail graspability function. The deflection requirement is original to this proposal and is needed to prevent, for example, loose rope handrails.

---

150 Code Reference **3.4.6.7.** Related Proposals Proposal number **4**

Proposal

Amend Clauses 3.3.1.15.(7) (a) & (b) (B.C.B.C.) as follows:

(a) the rise and run, measured at **points 200mm from each end** 500 mm maximum, or at the centre point conforms to Sentence 3.3.1.15.(1),

(b) **delete.**

Delete Sentence 3.3.1.15.(8)

Amend Sentence 3.3.1.15.(9) as follows:

(b) **delete.**

(c) the run, measured at a point **200mm** 100 mm from the narrow end, **conforms with the requirements for Type II stairs,** shall be 150 mm minimum.

Clauses (d) to (i), except (f), **delete.**

Reason

How can you talk about the run at the centre point of the stairway is uniform and in A-3.3.1.15.(9) you allow the run to differ in such a sudden manner that kids, seniors and disabled persons would have problems to walk those dangerous winders – never change rise and run within the flight!

(2 Additional sheets of drawings, documents - #4-A & B)

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151 Code Reference **3.4.6.7.** Related Proposals **Proposal number 135**

Proposal

Add Sentence 3.3.1.15.(?) (B.C.B.C.) as follows:

(?) Except for Type II stairs and stairs which can only be used in a descending direction, risers shall either be

(a) designed with a rakeback not exceeding 38 mm, or

(b) provided with the underside of the nosing having an angle of not less than 60° from the horizontal, and

(c) not have open risers.

Reason

Mainly a relocation of 3.7.3.14.(1)(d) and (e), part of the Section 3.7 integration process. Very few stairs can legitimately be exempted from these requirements under the current Code as most stairs can provide access. These requirements would now apply to all stairs except those in dwelling units and those which would not be used in an ascending direction such as a single storey exit stair not accessible from the bottom because of a door with no exterior hardware.

---

152 Code Reference **3.4.6.15.(1)(a)** Related Proposals **Proposal number 117**

Proposal

Amend Clause 3.4.6.15.(1)(a) as follows:

(a) every *exit* door from a *floor area* containing a Group A *occupancy* having an *occupant load* of more than 100 persons, except that this requirement may be waived for *exit* doors leading directly to the exterior from individual rooms or *suites* within a *floor area*, and where the *occupant load* of such rooms or *suites* is less than 100 persons,

Reason

Present wording requires an exterior door from a room such as a classroom, etc. used as an exit from that room, to be equipped with panic release hardware even though the occupant load in that room is less than 100, when the total population of the entire floor area is greater than 100. This is clearly not the intent of the Code since none of the occupants of other parts of the floor area will exit through another room, but rather will exit via a public corridor or their own individual doors, ie. only the occupants of the individual room would use the exit door in that room. Thus, as long as the occupant load of an individual room is less than 100, no panic hardware should be required on exit doors servicing only that room.

---

153 Code Reference **3.4.6.15.(2).** Related Proposals **Proposal number 338**

Proposal

Amend Sentence as follows:

.....**3.7.3.3.(7)**....., ...3.7.3.8.(1)(d) (B.C.B.C.).....

Editorial change

Reason

None given.

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154 Code Reference **3.4.6.15.(4).** Related Proposals **Proposal number 345**

Proposal

Amend Sentence as follows :

(4) Electromagnetic **locks that do not incorporate latches, pins or other similar devices to keep the door in a closed position** locking systems complying with CAN/ULC-S533 "Standard for Egress Door Securing and Releasing Devices" are permitted to be installed on ***exit*** doors in a *means of egress* other than doors serving **leading directly from** a Group F, Division 1 *occupancy* provided .....

Reason

(1) Where there is a standard available for life-safety devices, it should be used to ensure that such devices meet such a recognized minimum standard. Without such a standard, every manufacturer sets their own,if any.

ULC has such a standard, I believe, being CAN/ULC-S533-M87 entitled "Standard for Egress Door Securing and Releasing Devices".

(2) Many electromagnetic locking systems are being installed by building owners for security reasons. Even presuming required permits are applied for, the authority having jurisdiction has a better chance of ensuring they come up to an acceptable minimum standard if there is a recognized standard they must comply with.

---

155 Code Reference **3.5.1.2.** Related Proposals 258 to 274 **Proposal number 267**

Proposal

Amend as follows:

Change reference to "B.C. Electrical Code regulation" instead of "CSA C22.1 Canadian Electrical Code Part 1."

Editorial Note:- The proponent 's proposal relates to the 1985 Code wording, the 1990 N.B.C., wording would make this proposal redundant.

Reason

Possible conflict of applicable code. The building code reference should be to the applicable provincial standards adopted under the Electrical Safety Act.

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156 Code Reference **3.5.2.9.(1)** Related Proposals 258 to 274 **Proposal number 268**

Proposal

Amend as follows:

Delete ".....or, in the absence of . . . Part I,....." ,or

change reference to B.C. Electrical Code.

Reason

Avoid conflict with Electrical Safety Act.

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157 Code Reference **3.5.4.3.(1)** Related Proposals 258 to 274 Proposal number **270**

Proposal

Amend Clause 3.5.4.3. (1)(a)as follows:

Change (a) to read ". . . as permitted in the B.C. Electrical Code Regulation".

Editorial Note:- The proponent 's proposal relates to the 1985 Code wording, the 1990 N.B.C., wording would require alterations to this proposal.

Reason

Canadian Electrical Code Rule 2-128 is circular, refering back to NBC.

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158 Code Reference **3.5.5.3.** Related Proposals 9 Proposal number **7**

Proposal

Add Article as follows:

3.5.5.3. Elevator Signage. Every passenger elevator hoistway entrance shall have a permanent sign acceptable to the *authority having jurisdiction*, with the following wording:-

" In case of fire use exit stairs. Do not use elevator."

Reason

Many developers will not post signs unless there is a requirement for such signage. Fire statistics show that people have been killed during fires while using elevators. There should be mandatory signage requirements, warning people not to use the elevator if a fire develops.

---

159 Code Reference **3.6.4.2.** Related Proposals Proposal number **226**

Proposal

Delete Sentences 3.6.4.2. (3) and (4) and **substitute** as follows:

(3) The number of water closets required for Group A Division 1, 2, 3 and 4 *occupancies* shall conform to Table 3.6.4.A.

(4) Except as provided in Sentence (11), the number of water closets required for Group D *occupancies* shall conform to Table 3.6.4.B.

Reason

The number of water closets for all Group A Division 2 occupancies should be as required in Table 3.6.4.A.
The requirement for females should be increased to reflect Table 3.6.4.A and not as required in Table 3.6.4.B, which is the same as for males.
(See document 1 page .)

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160 Code Reference **3.6.4.2.** Related Proposals Proposal number **353**

Proposal

Delete Column 3 of Table 3.6.4.A and **substitute** as follows :

Females
2
3
4
5
6
8
10
12
13 plus 1 for each additional increment of 100 females in excess of 400
3

Reason

In large Public Assembly Buildings where there are intermissions or large crowds, the demand for female washrooms is very great. The lineups often are long and very possibly block safe egress from the area.

Women take more time than men in washrooms because:

1) Difference in clothing styles. Women generally wear more layers of clothing.
2) Women generally carry at least one item such as a purse which must be set aside.
3) Additional time is required during menstrual cycle.
4) There are more women than men.

Although the Building Code currently recognizes that for this type of occupancy females require more facilities than men. The current regulations do not go far enough. This becomes very evident during the attendance of a hockey game, intermissions for live productions, fairs and exhibitions, conferences, etc.

Studies show that women take 70 to 90 seconds longer in a washroom than men. The Toronto's Sky Dome has 49 washrooms for women and 30 for men, or 972 toilets for women and 307 for men. However the lineups are still endless outside the women's restrooms while they are non-existant outside the men's.

---

161 Code Reference **3.6.4.2.** Related Proposals **Proposal number 201**

Proposal

Add toTable 3.6.4.B. as follows:

51-100 persons	3 W.C. required
101-150 "	4 " "
over 150 "	5 plus 1 for additional increments of 50 persons of each sex in excess of 150

Reason

The 1990 N.B.C. is still not clear on the number of water closets required. I believe this is the case as many new large restaurants do not have the required number of fixtures perhaps due to misinterpretation or misunderstanding of the table.

---

162 Code Reference **3.6.4.2.** Related Proposals **Proposal number 326**

Proposal

Amend Tables 3.6.4.A & B as follows:

Ratio between male and female water closets should be 1:2.

Editorial Note:- This proposal is an over-simplification of the code changes required to achieve the proponent's intent. In the event this proposal is adopted further code modification would be required.

Reason

(See document 9 pages)

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163 Code Reference **3.6.4.2.** Related Proposals **Proposal number 279**

Proposal

Amend Tables as follows:

Table 3.6.4.A.
Last entry of column 2 to read:- 8 plus 1 for each increment of 200 or portion thereof in excess of 400
Last entry of column 3 to read:- 8 plus 1 for each increment of 150 or portion thereof in excess of 400

Table 3.6.4.B.
Last entry of column 2 to read:- 2 plus 1 for each increment of 200 or portion thereof in excess of 50

Table 3.6.4.C.
Last entry of column 2 to read:- 5 plus 1 for each increment of 30 or portion thereof in excess of 100

Reason

To better reflect th intent.
The present wording is confusing, and therefore open to misinterpretation and/or misapplication.

---

164 Code Reference **3.6.4.2.(9)** Related Proposals **Proposal number 212**

Proposal

Amend Sentence 3.6.4.2.(9) as follows:

(9) Except as provided in Sentence (11), the number of water closets required for *mercantile occupancies* shall be at least one fixture for each 300 males and one fixture for each 150 females, and where individual tenant spaces exceed 600 m2 shall be located so that at all times they are accessible to the public.

Reason

In present situations the washrooms are located behind the "scenes" in areas to which the public are not permitted entry. Although the facilities are constructed based on the total occupant load (both staff and public included) they are generally used by staff only, with the public being told to go elsewhere.

With the amount of time spent by the public in retail establishments this is an inconvenience experienced by all, but especially parents with small children. Consumers tend to spend more time in mercantile buildings, or at least an equivalent amount, to what they spend in assembly occupancies (i.e.: restaurants, theatres, etc.) where facilities are readily accessible.

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165 Code Reference **3.6.4.2.(10).** Related Proposals **Proposal number 15**

Proposal

Delete Sentence 3.6.4.2.(10) and substitute the following:

(10) Except as provided in Sentence (11) the number of water closets required for *industrial occupancies* shall conform to Table 3.6.4.C. the number of occupants may be based on the likely number of employees per shift and not by *occupant load* as derived from Table 3.1.14.A.

Reason

In some circumstances the number of toilets required based on occupant load is absurdly large for the actual number of employees in the building.

---

166 Code Reference **3.6.4.2.(11)** Related Proposals

Proposal number **216**

Proposal

Amend Sentence 3.6.4.2.(11) as follows:

(11) Where the *occupant load* in an *occupancy* described in Sentence (3), (4), (5), (6), (8), (9) and (10) **is not more than** does not exceed 10 persons, or where the total area in a Group E *occupancy* **is not more than** does not exceed 100 m2, both sexes may be served by 1 **one** water closet.

Reason

The logic of Sentence (11) in allowing 1 water closet for 10 or less persons should also include those uses in Sentences (3), (5) and (6).

---

167 Code Reference **3.7.1.2.** Related Proposals

Proposal number **136**

Proposal

Add Article as follows:

3.7.1.2. Where there are openings through a *firewall* other than those for piping, tubing, wiring and conduit, the requirements of this Section shall apply to the *floor areas* on both sides of the *firewall* as if they were in the same *building*.

Renumber existing Articles accordingly:

Reason

Access for the disabled to a building should not be denied simply because it is divided by firewalls into "buildings" small enough to be exempted from access requirements. If there is no internal access between the "buildings" divided by firewalls they are effectively free standing buildings and access exemptions can then be applied.

It was never the intent of Section 3.7 to allow exemption of access requirements simply by installing firewalls but, unfortunately, this ploy has been tried.

---

168 Code Reference **3.7.1.3.(2)** Related Proposals

Proposal number **132**

Proposal

Amend Sentence 3.7.1.3.(2) (B.C.B.C.) definition as follows:

access or *accessible* means that a *disabled person* is, without assistance, able to approach, enter, pass to and from, and make use of an area and its *facilities*, or either of them on a basis that is as equal as practicable to that of a non-disabled person.

Reason

To clarify the intent of providing access for disabled persons. Providing an outdoor wheelchair ramp between storeys while the ambulatory uses interior stairs is not considered to meet the intent of Section 3.7 but is not clearly prohibited under the current Code.

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169 Code Reference **3.7.1.3.** Related Proposals **Proposal number 143**

Proposal

Add to Sentence 3.7.1.3.(2) (B.C.B.C.) definitions as follows:

Areas of refuge means a space that facilitates a safe delay in egress, is sufficiently protected from fire conditions developing in the *floor area*, and provides direct access to an *exit* or *fire fighter's elevator*.

(See Article 3.7.3.27.)

Fire fighter's elevator means a specially protected elevator system suitable for use by fire fighters and others with fire fighter supervision. (See Article 3.2.6.4.)

Smoke protected means a space that will contain not more than 1 per cent by volume of contaminated air from the fire floor, during a 2 hour period after the start of the fire, assuming an outdoor temperature equal to the January design temperature on a 2-1/2 per cent basis determined in accordance with Subsection 2.2.1. (Methods of achieving this performance are described in Chapter 3 of the Supplement to the NBC 90.)

Delete Clause 3.7.2.5.(1)(e) (E.C.B.C.) and **substitute** the following:

(e) each *floor area* to which *disabled persons* are provided *access*, provided with *areas of refuge* in conformance with Article 3.7.3.27. (See Appendix A.)

Appendix

Add Clause as follows:

A-3.7.2.5.(1)(e) Providing access to a floor area does not make the floor area accessible. Elevators in apartment buildings must be accessible, but the floor areas are not required to be accessible so areas of refuge are not required. However, if accessible or adaptable suites are provided on a floor area then areas of refuge are required.

Delete Article 3.7.3.27.(1)(B.C.B.C.) and **substitute** the following:

3.7.3.27.(1) Every *floor area* described in Clause 3.7.2.5.(1)(e) shall be served by *areas of refuge* which, except as provided in Sentence (3), shall in number and location meet the requirements of Subsection 3.4.2.

(2) Areas of refuge shall be

(a) an acceptable open space *accessible* from an exterior *exit* door,

(b) an acceptable space accessed by a *horizontal exit*,

(c) an *exit* enclosure or an enclosure connected to and directly *accessible* from an *exit* and having the same *fire separation* as the *exit*,

(d) an area conforming to Sentence 3.2.6.3.(1), or

(e) a vestibule or corridor served by a *fire fighter's elevator* conforming to Sentence 3.2.6.9.(4) to (6) and protected against fire in conformance with Clauses 3.2.6.9.(3)(b) or (c).

(3) Two *areas of refuge* may be served by one vestibule or corridor conforming to Clause (2)(e) provided the vestibule or corridor is *accessible* from at least two different directions of travel.

(4) *Areas of refuge* described by Clause (2)(c), (d) and (e) shall

(a) be *smoke protected* when located in *buildings* exceeding three *storeys* in *building height* whether the *building* is *sprinklered* or not, and

(b) contain at least two spaces for non-ambulatory persons, each measuring at least 1220 mm X 1220 mm but not obstructing egress for ambulatory persons.

(5) *Areas of refuge* described in Sentence (2) shall be designed as *areas of refuge* on the plans and identified as such in the *building*.

(6) Except for doors conforming to the maximum temperature rise limitations of Table 3.1.8.B., glazed openings are not permitted in walls between *areas of refuge* described in Sentence (2) and in the remainder of the *floor area*.

Reason

This change corrects the 1985 Code which omitted exit enclosures as areas of refuge and adds two new items:

(1) All *floor areas* to which *disabled persons* are provided *access* must have *areas of refuge*, not just *floor areas* required to be *accessible*.

(2) *Areas of refuge* shall conform to the number and location requirements for *exits* so all required *exits* shall be *accessible* giving *disabled persons* egress facilities as equal as possible to those for the able bodied.

---

170 Code Reference **3.7.2.1.** Related Proposals **Proposal number 131**

Proposal

Amend Sentence 3.7.2.2.(3), Clauses 3.7.2.1.(2)(b) and 3.7.2.3.(1)(b) and Sub-clause 3.7.4.1.(2)(b)(i) (all B.C.B.C.) as follows:

Delete the words : **convents** and **monasteries**

Reason

Exactly why convents and monasteries were exempted from Section 3.7 has been lost but there seems to be no valid reason anymore. Besides, very few of this type of building is constructed so no major consequences are involved.

---

171 Code Reference **3.7.2.** Related Proposals **Proposal number 139**

Proposal

Add Articles as follows:

3.7.2.7. In assembly occupancies, all classrooms, auditoria, meeting rooms and theatres with an area of more than 100 m2 shall have available an assistive listening system conforming with Article 3.7.3.28.

3.7.3.28. Where assistive listening systems are required by Subsection 3.7.2., they shall be provided throughout the entire seating area except that with an induction loop system only half the seating area need be encompassed. (See Appendix A)

Appendix

Add Article as follows:

A-3.7.3.28. Assistive Listening Systems

Wireless sound transmission systems such as FM, infrared or magnetic induction loop, improve sound reception for the hard of hearing by providing amplification which can be adjusted by each user while blocking out unwanted background noise. These systems transmit a signal that is picked up by special receivers available for use by persons with a hearing impairment, whether or not they use a hearing aid. Neither system interferes with the listening enjoyment of others.

The induction loop system requires users to sit in the area circumscribed by the loop whereas FM and infrared systems can be designed to broadcast signals which cover the entire room. Although portable systems are permitted they are best suited to small audiences. Good acoustics are required for any of these systems to function adequately. More information is available from the Canadian Hard of Hearing Association, B.C. Chapter.

Reason

Something like 50% of the population has some degree of hearing impairment. Convenient systems to assist these people to hear in large rooms such as theatres and lecture halls as well as smaller conference rooms and classrooms are readily available and should be standard equipment in new buildings. The 1990 NBC has a similar requirement.

---

172 Code Reference **3.7.2.1.(2)(a).** Related Proposals **Proposal number 137**

Proposal

Delete Clause 3.7.2.1.(2)(a) and **substitute** the following:

3.7.2.1.(2) (B.C.B.C.) This Subsection does not apply to

(a) a storey of less than 300 m2 in floor area next above and/or below the first storey in a building or suite containing not more than three storeys unless

(i) the principal function of the building or suite is on that storey,

(ii) that storey contains facilities integral with the principal function, or

(iii) that storey contains an assembly occupancy with an area exceeding 100 m2.

(See Appendix A)

Appendix

Add Clause as follows :

A-3.7.2.1.(2)(a) **Access to Small Storeys.** Elevators and elevating devices for disabled persons are relatively expensive and in small buildings are difficult to justify because they may form a significant percentage of a building's cost. This Clause is intended to exempt such small second storeys or basements from access requirements when they are self- contained or contain the same facilities as on the first storey.

Examples where access is not required are office tenants on the second storey of a small building and the second storey of a restaurant which contains only additional seating. If, on the other hand, the restaurant's washrooms are in the less than 600 m2 basement there must be access to them as they are an integral part of the principle function on the first storey. Likewise, staff lunchrooms and washrooms are integral with the principle function and when they are on a small second storeys or mezzanines they must be accessible when a disabled person could reasonably be expected to be employed there.

This exemption applies to buildings of two storeys in building height containing not more than three storeys. A building of three storeys in building height must be fully accessible.

Reason

The current Code permits the second storey or basement of a small two storey building to be inaccessible. The original intent was only to exempt access to small second storeys or basements where they contained only facilities also available on the first storey or separate occupancies or tenants not connected to the first floor occupancy or tenant(s). It was considered an economic hardship to provide access to a small second storey or basement.

However, buildings with required facilities split between two storeys become effectively inaccessible when some of these facilities are on the inaccessible storey. Two examples which should be fully accessible are a public building with it's washrooms in the basement or a restaurant on the second storey with it's entrance foyer on the first storey. All assembly occupancies should be accessible regardless of location or size but an exception can be justified for very small ones.

Reducing the area from 600 m2 to 300 m2 compensates for allowing an extra storey to be inaccessible and makes more buildings accessible to the disabled.

---

173 Code Reference **3.7.2.1.(2).** Related Proposals **Proposal number 205**

Proposal

Delete Clause3.7.2.1.(2)(d) (B.C.B.C.) and **substitute** as follows:

(d) In Group E occupancies with individual tenant spaces of less than 50m2.

Reason

The present wording is not clear and is being interpreted different ways. Is it intended that the 50 m2 apply to each tenant space or does it apply to the building area?

The proposed change is not intended to be the correct interpretation of an unclear requirement, but to make the requirement clearer to be able to apply the regulation in an uniform manner.

---

174 Code Reference **3.7.2.1.(2)** Related Proposals **Proposal number 130**

Proposal

Delete Clause 3.7.2.1.(2)(f).(B.C.B.C.)

Reason

The Clause is redundant because the intent behind it is better handled by Clause 3.7.2.5.(1)(c) which requires access to work areas where disabled persons can reasonably be employed.

Clause 3.7.2.1.(2)(f) has been misinterpreted to exempt an entire occupancy from access requirements just because someone in a wheelchair couldn't work there. It was only intended to exempt the area where the wheelchair user couldn't work from wheelchair access requirements.

---

175 Code Reference **3.7.2.1.(2).** Related Proposals **Proposal number 206**

Proposal

Delete Clause 3.7.2.1.(2).(f).(B.C.B.C.)

Reason

Delete this clause unless a better wording is provided to state the requirement clearly without making it a "judgement call" by the authority having jurisdiction, who do not have the expertise to make this decision.

It is difficult to determine what "jobs" a person in a wheelchair is not able to do.

---

176 Code Reference **3.7.2.2.** Related Proposals **Proposal number 209**

Proposal

Amend Sentences as follows:

3.7.2.2.(1) Notwithstanding Sentence 3.7.2.1.(2), the requirements of Article 3.7.3.14. shall, except as described in Sentence (3) apply to all stairs **which provide access to *storeys* of *buildings* of new construction but shall not apply to** including *exit* stairs, **unless they are normally used for access purposes.**

(2) Notwithstanding Sentence 3.7.2.1.(2), the requirements of Article 3.7.3.15. shall, except as described in Sentence (3), apply to all handrails of *buildings* of new construction including those to *exit* stairs.

Reason

Currently the 1985 B.C.B.C. only requires stairs which provide access to storeys of a building but not to exit stairs unless they provide access.

This type of thinking is contrary to the premise of the Building Code where the prime objective is Life Safety. Presumably, exit stairs should have greater requirements than stairs that merely provide access.

---

177 Code Reference **3.7.2.5.(1)(d)** Related Proposals **Proposal number 138**

Proposal

Delete Clause 3.7.2.5.(1)(d) (B.C.B.C.) and **substitute** the following:

(d) where washrooms are required by this Part or Part 9, accessible washrooms conforming to Article 3.7.3.21. serving each area to which *disabled persons* are provided *access* and where multiple water closet washrooms are provided at least one toilet room conforming to Sentence 3.7.3.21.(9), and
(See Appendix A)

Appendix

Add Clause as follows :

A-3.7.2.5.(1)(d) There are a significant number of disabled persons whose daily lives depend heavily on assistance from a constant companion who is often of the opposite sex. This one companion is precluded from assisting in multiple stall public washrooms. The toilet room not only solves this problem but also serves the needs of other disabled persons who simply prefer the relative ease of using a toilet room. It can also serve as a washroom for parents with small children and, with the addition of a small counter, as a changing room for infants. It should be noted that it is not the intent of this clause to require an extra water closet.

Reason

The suggested Appendix note explains the reason for this proposal. Although the disabled community does not wish to be segregated and in general prefers accessible public washrooms there is a growing segment for whom this is not acceptable. The need for a toilet room can apply to employees as well as customers and the general public. The addition of at least one accessible toilet room in buildings with multi-stall washrooms should not be a hardship and will benefit more than just the disabled community.

---

178 Code Reference **3.7.2.15.** Related Proposals **Proposal number 129**

Proposal

Delete from the fourth line Article 3.7.2.15.(B.C.B.C.):

and where the seating is permanent,

Reason

It is not relevant whether or not the seating is permanent. The current wording implies that viewing of entertainment areas is not necessary if seating is not permanent.

---

179 Code Reference **3.7.2.18.(3)** Related Proposals **Proposal number 128**

Proposal

Delete Sentence 3.7.2.18.(3) (B.C.B.C.) and **substitute** as follows:

(3) In addition to the requirements of Sentence (1) every *floor area* to which *disabled persons* are provides *access* shall be designed in conformance with Article 3.7.3.27.

Reason

To conform to the proposed change to Clause 3.7.2.5.(1)(e) requiring areas of refuge on every floor area to which access is provided.

---

180 Code Reference **3.7.2.41.(2)** Related Proposals **Proposal number 127**

Proposal

Delete Sentence 3.7.2.41.(2) (B.C.B.C.)

Reason

There is no justification for exempting "outhouses" from access requirements and there is no reason they cannot be made accessible.

---

181 Code Reference **3.7.3.2.(1)** Related Proposals **Proposal number 126**

Proposal

Add Clause 3.7.3.2.(1)(e) (B.C.B.C) as follows:

(e) have gratings with openings that will not permit the passage of a sphere larger than 13 mm in diameter and with elongated openings oriented at 90° +- 10° to the direction of travel.

Reason

Pavement gratings can be a hazard to a wheelchair user because the wheels can jam in the openings. They can also cause similar problems for persons using wheel equipped walking aids and people pushing strollers and shopping carts. They also present a hazard to people using crutches and canes not to mention women's high heels get stuck in them.

---

182 Code Reference **3.7.3.4.(1)** Related Proposals **Proposal number 91**

Proposal

Amend Sentence 3.7.3.4.(1) (B.C.B.C.) as follows:

That there be a percentage of disabled parking spaces be specifically made wider to allow parking and disembarking from a van with a side-lift.

Reason

The apartment I live in has 5 spaces for the disabled. Prior to introduction of these I approached by property manager with personal difficulties experienced. Now one of the 5 spaces is made wider which is great.

---

183 Code Reference **3.7.3.5.(4)** Related Proposals **Proposal number 140**

Proposal

Amend Sentence 3.7.3.5.(4) (B.C.B.C.) as follows:

(4) Automatic doors, which are exempt from the side clearance requirements of Sentence (1), shall be provided at the *accessible* main entrance to

(a) hotels, and

(b) *buildings* of Group A, Group B Division 2, Group D or Group E major occupancy more than 500 m2 in *building area*.

Reason

Automatic doors are no longer a novelty but should be considered a necessity on major public buildings with high traffic volume where a significant percentage of users will be disabled or need assistance opening the door. There are probably more able bodied people than there are disabled persons who have trouble with doors due to the encumbrance of packages, umbrellas, shopping carts and the like, and who would find automatic doors a significant improvement. This change is similar to the 1990 NBC.

---

184 Code Reference **3.7.3.8.(1).** Related Proposals **Proposal number 125**

Proposal

Delete Clause 3.7.3.8.(1).(c) (B.C.B.C.) and **substitute** as follows:

(c) be operable by devices which do not require tight grasping, or twisting of the wrist, as the only means of operation.

Reason

Many disabled persons have difficulty using the standard door knob because they have limited use of their hands and wrists. Lever handles are acceptable and are also more convenient for the non-disabled because they can be operated by an elbow or hip when one's hands are full.

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185 Code Reference **3.7.3.11.** Related Proposals **Proposal number 124**

Proposal

Add Clause 3.7.3.11.(1) (c) (B.C.B.C.) as follows:

(c) have self-serve items *accessible* to persons in wheelchairs.

Reason

Wheelchair users should be able to reach items in food service lines without having to ask for assistance. This proposal would put items within their reach.

---

186 Code Reference **3.7.3.16.** Related Proposals **Proposal number 123**

Proposal

Add Clauses 3.7.3.16.(2)(b) & (c) (B.C.B.C.) as follows:

(b) permanent,

(c) not more than 3 mm above or below the surrounding floor surface, and

Renumber: existing Clause3.7.3.16.(2) (b) to (d) (B.C.B.C.) and **add** at end : (See Appendix A)

Appendix

Add Sentence as follows:

A-3.7.3.16.(2) The drawings below illustrate one acceptable design of tactile warning strips. (Use illustrations from ANSI A117.1)

Reason

Provides clarification regarding design and installation of tactile warning strips.

Appendix note provides illustration of an acceptable design.

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187 Code Reference **3.7.3.18.** Related Proposals **Proposal number 141**

Proposal

Amend Article 3.7.3.18. (B.C.B.C.) as follows:

Delete Sentence 3.7.3.18. (1)

Renumber Sentence (2) to Sentence (1), and change "or" to "and" in the second line, and

Add the following Clauses:

(h) *accessible* checkout lanes,

(i) *accessible* teller locations, and

(j) *accessible means of egress*.

Add Clause 3.7.3.18. (4)(d) as follows:

(d) for parking spaces be 1.5 m above the ground measured to the bottom of the sign.

Renumber Clauses 3.7.3.18. (4)(d) to become (e) and (f) to become (g).

Reason

Sentence (1) is redundant with rewording of Sentence (2). Checkouts and teller locations should be identified and the means of egress identification requirement should be in this Sentence as well as Sentence 3.7.3.27.

Parking signs painted on the pavement are covered by snow in the winter so above ground signs are needed.

---

188 Code Reference **3.7.3.21.(6)** Related Proposals **Proposal number 224**

Proposal

Amend Sentence 3.7.3.21.(6) (B.C.B.C.) as follows:

(6) Where urinals are provided in place of required water closets as described in Sentence 3.6.4.2.(2), at least one shall be . . . etc.

Reason

Alternatively require the height of urinals to be the same for all urinals and do not distinguish between urinals provided for the physical disabled and others.

The way this sentence is presently written, if a second urinal is provided as an addition to code requirements, that urinal would have to meet the requirements of 3.7.3.21.(6). If the owner does not want to install the second urinal to the lower height, for whatever reason, or it has not been installed to 3.7.3.21.(6), the simplest solution for the owner is to remove the urinal that is not required instead of changing the plumbing.

The height of the opening should only apply to urinals required by 3.6.4.2.(2).

An alternative solution would be to simply specify that all wall mounted urinals be the same height as required for the physically disabled, a lower urinal is as useable by everyone, as one installed, at what is a normally acceptable height.

---

189 Code Reference **3.7.3.21.** Related Proposals

Proposal number **142**

Proposal

Amend Clauses 3.7.3.21.(3) (a), (b) & (f) (B.C.B.C.) as follows:

(a) be located with the centre line of the fixture 455 mm + - 25 mm from the side wall carrying the grab bar and at least 1045 mm + - 25 mm from any obstruction on the non grab bar side.

(b) except as provided in Subclause 3.7.3.22.(1)(h)(i) be mounted with the top of the rim 455 mm + - 25 mm above the finished floor,

(f) where tank-type water closets are not used, have a toilet seat cover that rests against the grab bar referenced in Clause 3.7.3.21.(4)(b) to provide back support.

Amend Sub-clauses 3.7.3.21.(4) (a)(ii), & (iv) (B.C.B.C.) as follows:

(ii) installed with a minimum clearance of **38 mm** 40 mm from the wall,

(iv) minimum 1200 long, mounted horizontally 840 mm + - 25 mm above the finished floor, with the mid -point of the length in line with the front edge of the water closet and which at its mid-point may angle upward a maximum of 60 degrees from the horizontal forward of the water closet, and

Amend Clauses 3.7.3.21.(5) (a) to (d) (B.C.B.C.) as follows:

(a) be located 815 mm + - 25 mm above the finished floor and have a vertical clearance of minimum 715 mm under the apron, and a clear area under the wash basin minimum 660 mm high to a point 250 mm back from the front face of the apron and a further clear space 250 mm high to a point 500 mm back from the front face of the apron,

(b) have a clear floor space centered in front of the wash basin 815 mm wide and 1100 mm deep exclusive of space under the wash basin,

Re- number existing Clauses (b) to (c) & (c) to (d)

Amend Clauses 3.7.3.21.(9) (a) & sub-clauses (c)(iv) (B.C.B.C.) as follows:

(a) a minimum floor space of **4 m2** 3.7 m2 with no dimension less than **1750 mm,** 1700 mm when the door swings out and 4.0 m2 with no dimension less than 1800 mm when the door swings in.

(c)(iv) is located with the centre line of the fixture 455 mm + - 25 mm from the side wall carrying the grab bar and at least 1045 mm + - 25 mm from any obstruction on the non grab bar side, and

Reason

Clause (3)(a) and Subclause (9)(c)(iv) did not currently specify the minimum clearance on the non-grab bar side of a toilet and this has caused some problems for designers, contractors, and inspectors.

Although Subclause 3.7.3.22.(1)(h)(i) requires a standard height toilet it is being frequently missed because people only read the washroom requirements in Article 3.7.3.21. The cross reference in Clause (3)(b) should alleviate this problem.

The change to Subclause (4)(a)(iv) is to ensure the grab bar is installed right way up. At least one has been installed upside down because the curent wording does make it clear that a bar with a 45° bend must have the bend going up, not down. Also, as both straight and angled bars are permitted it was felt that a range of 0° to 60° would be acceptable.

The addition to Clause (5)(a) provides toe space under wash basins which is not currently allowed for in our Code but is in others.

The minor change to Clause (9)(a) permits a slightly smaller toilet room than currently in the Code if the door swings out.

This group of changes are primarily for clarification purposes and are in line with the 1990 NBC and ANSI and CSA Standards.

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190 Code Reference **3.7.3.23..** Related Proposals

Proposal number **122**

Proposal

Delete Clause 3.7.3.23.(1)(b) (B.C.B.C.) and **substitute** the following:

(b) not less than 900 mm wide and 1525 mm long to permit wheelchairs to enter from a side approach and 1220 mm long where the wheelchair enters from the front or rear of the space and shall provide a clear view of the event taking place.

Reason

More room is required to "parallel park" a wheelchair (side approach) than to wheel straight in. The current Code does not allow for this. The change comes direct from the 1990 NBC except for the width.

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191 Code Reference **3.7.3.24.** Related Proposals

Proposal number **121**

Proposal

Add Clause 3.7.3.24.(1)(d) (B.C.B.C.) as follows:

(d) have an adjacent shelf not less than 250 mm wide by 350 mm deep with a clearance above the shelf of not less than 715 mm.

Renumber existing Clauses 3.7.3.24.(1)(d) & (e) as (e) & (f).

Reason

Many hearing impaired persons use a telecommunication device for the deaf (TDD) with a standard telephone to communicate visually. A shelf is needed to place the TDD on. The 1990 NBC contains this requirement.

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185 Code Reference **3.7.3.11.** Related Proposals **Proposal number 124**

Proposal

Add Clause 3.7.3.11.(1) (c) (B.C.B.C.) as follows:

(c) have self-serve items *accessible* to persons in wheelchairs.

Reason

Wheelchair users should be able to reach items in food service lines without having to ask for assistance. This proposal would put items within their reach.

---

186 Code Reference **3.7.3.16.** Related Proposals **Proposal number 123**

Proposal

Add Clauses 3.7.3.16.(2)(b) & (c) (B.C.B.C.) as follows:

(b) permanent,

(c) not more than 3 mm above or below the surrounding floor surface, and

Renumber: existing Clause3.7.3.16.(2) (b) to (d) (B.C.B.C.) and **add** at end : (See Appendix A)

Appendix

Add Sentence as follows.

A-3.7.3.16.(2) The drawings below illustrate one acceptable design of tactile warning strips. (Use illustrations from ANSI A117.1)

Reason

Provides clarification regarding design and installation of tactile warning strips.
Appendix note provides illustration of an acceptable design.

---

187 Code Reference **3.7.3.18.** Related Proposals **Proposal number 141**

Proposal

Amend Article 3.7.3.18. (B.C.B.C.) as follows:

Delete Sentence 3.7.3.18. (1)
Renumber Sentence (2) to Sentence (1), and change "or" to "and" in the second line, and
Add the following Clauses:

(h) *accessible* checkout lanes,
(i) *accessible* teller locations, and
(j) *accessible means of egress.*

Add Clause 3.7.3.18. (4)(d) as follows:

(d) for parking spaces be 1.5 m above the ground measured to the bottom of the sign.

Renumber Clauses 3.7.3.18. (4)(d) to become (e) and (f) to become (g).

Reason

Sentence (1) is redundant with rewording of Sentence (2). Checkouts and teller locations should be identified and the means of egress identification requirement should be in this Sentence as well as Sentence 3.7.3.27.

Parking signs painted on the pavement are covered by snow in the winter so above ground signs are needed.

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188 Code Reference **3.7.3.21.(6)** Related Proposals **Proposal number 224**

Proposal

Amend Sentence 3.7.3.21.(6) (B.C.B.C.) as follows:

(6) Where urinals are provided in place of required water closets as described in Sentence 3.6.4.2.(2), at least one shall be . . . etc.

Reason

Alternatively require the height of urinals to be the same for all urinals and do not distinguish between urinals provided for the physical disabled and others.

The way this sentence is presently written, if a second urinal is provided as an addition to code requirements, that urinal would have to meet the requirements of 3.7.3.21.(6). If the owner does not want to install the second urinal to the lower height, for whatever reason, or it has not been installed to 3.7.3.21.(6), the simplest solution for the owner is to remove the urinal that is not required instead of changing the plumbing.

The height of the opening should only apply to urinals required by 3.6.4.2.(2).

An alternative solution would be to simply specify that all wall mounted urinals be the same height as required for the physically disabled, a lower urinal is as useable by everyone, as one installed, at what is a normally acceptable height.

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189 Code Reference **3.7.3.21.** Related Proposals

Proposal number 142

Proposal

Amend Clauses 3.7.3.21.(3) (a), (b) & (f) (B.C.B.C.) as follows:

(a) be located with the centre line of the fixture 455 mm + - 25 mm from the side wall carrying the grab bar and at least 1045 mm + - 25 mm from any obstruction on the non grab bar side,

(b) except as provided in Subclause 3.7.3.22.(1)(h)(i) be mounted with the top of the rim 455 mm + - 25 mm above the finished floor,

(f) where tank-type water closets are not used, have a toilet seat cover that rests against the grab bar referenced in Clause 3.7.3.21.(4)(b) to provide back support.

Amend Sub-clauses 3.7.3.21.(4) (a)(ii), & (iv) (B.C.B.C.) as follows:

(ii) installed with a minimum clearance of **38 mm** 40 mm from the wall,

(iv) minimum 1200 long, mounted horizontally 840 mm + - 25 mm above the finished floor, with the mid -point of the length in line with the front edge of the water closet and which at its mid-point may angle upward a maximum of 60 degrees from the horizontal forward of the water closet, and

Amend Clauses 3.7.3.21.(5) (a) to (d) (B.C.B.C.) as follows:

(a) be located 815 mm + - 25 mm above the finished floor and have a vertical clearance of minimum 715 mm under the apron, and a clear area under the wash basin minimum 660 mm high to a point 250 mm back from the front face of the apron and a further clear space 250 mm high to a point 500 mm back from the front face of the apron,

(b) have a clear floor space centered in front of the wash basin 815 mm wide and 1100 mm deep exclusive of space under the wash basin.

Re- number existing Clauses (b) to (c) & (c) to (d)

Amend Clauses 3.7.3.21.(9) (a) & sub-clauses (c)(iv) (B.C.B.C.) as follows:

(a) a minimum floor space of **4 m2** 3.7 m2 with no dimension less than **1750 mm,** 1700 mm when the door swings out and 4.0 m2 with no dimension less than 1800 mm when the door swings in,

(c)(iv) is located with the centre line of the fixture 455 mm + - 25 mm from the side wall carrying the grab bar and at least 1045 mm + - 25 mm from any obstruction on the non grab bar side, and

Reason

Clause (3)(a) and Subclause (9)(c)(iv) did not currently specify the minimum clearance on the non-grab bar side of a toilet and this has caused some problems for designers, contractors, and inspectors.

Although Subclause 3.7.3.22.(1)(h)(i) requires a standard height toilet it is being frequently missed because people only read the washroom requirements in Article 3.7.3.21. The cross reference in Clause (3)(b) should alleviate this problem.

The change to Subclause (4)(a)(iv) is to ensure the grab bar is installed right way up. At least one has been installed upside down because the curent wording does make it clear that a bar with a 45° bend must have the bend going up, not down. Also, as both straight and angled bars are permitted it was felt that a range of 0° to 60° would be acceptable.

The addition to Clause (5)(a) provides toe space under wash basins which is not currently allowed for in our Code but is in others.

The minor change to Clause (9)(a) permits a slightly smaller toilet room than currently in the Code if the door swings out.

This group of changes are primarily for clarification purposes and are in line with the 1990 NBC and ANSI and CSA Standards.

---

190 Code Reference **3.7.3.23..** Related Proposals

Proposal number 122

Proposal

Delete Clause 3.7.3.23.(1)(b) (B.C.B.C.) and **substitute** the following:

(b) not less than 900 mm wide and 1525 mm long to permit wheelchairs to enter from a side approach and 1220 mm long where the wheelchair enters from the front or rear of the space and shall provide a clear view of the event taking place,

Reason

More room is required to "parallel park" a wheelchair (side approach) than to wheel straight in. The current Code does not allow for this. The change comes direct from the 1990 NBC except for the width.

---

191 Code Reference **3.7.3.24.** Related Proposals

Proposal number 121

Proposal

Add Clause 3.7.3.24.(1)(d) (B.C.B.C.) as follows:

(d) have an adjacent shelf not less than 250 mm wide by 350 mm deep with a clearance above the shelf of not less than 715 mm,

Renumber existing Clauses 3.7.3.24.(1)(d) & (e) as (e) & (f).

Reason

Many hearing impaired persons use a telecommunication device for the deaf (TDD) with a standard telephone to communicate visually. A shelf is needed to place the TDD on. The 1990 NBC contains this requirement.

---

192 Code Reference **3.7.3.27.** Related Proposals **Proposal number 312**

Proposal

Add Sentences 3.7.3.27.(6) and (7) (B.C.B.C.) as follows:

(6) Except as outlined in 3.7.3.27.(7) areas of refuge in 3.7.3.27.(c) and (d) shall, where the fire alarm system requires an annunciator, be provided with a pull station and acceptable signage within the area of refuge. such refuge areas shall be identified on a separate zone of the annunciator panel as an occupied refuge area.

(7) The requirements of 3.7.3.27.(6) are waived where a pull station within 3 m of this refuge area is separately zoned and identified as a refuge area on the annunciator panel.

Reason

Handicapped persons requiring assistance have no means of calling for assistance.

---

193 Code Reference **Section 3.8** Related Proposals **Proposal number 202**

Proposal

Add Section as follows:

Section 3.8 Portable Classrooms

3.8.1. General

3.8.1.1. A single portable classroom shall not exceed 100m2 in *building area*, or 1 *storey* in *building height*.

3.8.1.2. Where the horizontal distance between portable classrooms is less than 6 m they shall be considered as a single *building* of a size equal to the aggregate area of the portable classrooms and the requirements of Subsection 3.2.2. for a *building* of such size shall apply.

3.8.2. Means of Egress

3.8.2.1. Except where fuel-fired heating *appliances* are enclosed with a *fire separation* having a *fire-resistance rating* of at least 3/4 h, each portable classroom shall be provided with not less than two *exit* doors placed as remote from each other as practicable , and which open directly to the outdoors.

3.8.2.2.(1) All *exit* doors shall open in the direction of travel, and

(a) Shall not be equipped with hardware that will,

(i) permit the door to be locked against egress, or

(ii) prevent the door from being opened with one hand, and

(b) shall not be equipped with night latches, flush bolts, draw bolts or similar locking devices.

3.8.3. Interior Finish

3.8.3.1. No interior finish material used on a wall or ceiling of a portable classroom shall have a *flame-spread rating* greater than 150.

3.8.4. Heating

3.8.4.1. Heating systems and equipment shall be designed and installed in accordance with Section 6.2.

3.8.4.2.(1) A fuel-fired *appliance* is permitted without *fire separations* in a portable classroom provided,

(a) there is not more than one *appliance* per classroom, and

(b) the *appliance* is at least 4.5 m from an *exit*

3.8.4.3.(1) Notwithstanding the provisions of Article 3.8.4.2., fuel-fired *appliances* shall be enclosed by a *fire separation* having

(a) 3/4 h *fire-resistance rating* where the horizontal distance between portable classrooms is less than 6 m but greater than 1.5 m and

(b) 1 1/2 h *fire-resistance rating* where the horizontal distance between portable classrooms is 1.5 m or less.

3.8.5. Provisions for Fire Fighting

3.8.5.1. A fire extinguisher, in accordance with Article 3.2.5.6., shall be installed in a portable classsroom.

3.8.6. Fire Alarm System

3.8.6.1. Where the horizontal distance between a portable classroom and a main school *building* on the site is less than 12 m, the fire alarm system in the main school *building* shall be extended into the portable classroom.

3.8.6.2.(1) A fire alarm system installed in accordance with the requirements of Subsection 3.2.4. shall be provided where,

(a) there are four or more portable classrooms in a group and the horizontal distance between portable classrooms is less than 6 m,

or

(b) there are fewer than four portable classrooms in a group and the horizontal distance between portable classrooms is less than 2m,

whether or not there is a main school *building* on the site.

(2) For the purposes of determining the fire alarm requirements, the group of portable classrooms shall be considered a separate *building*.

3.8.7. Separation from Main Buildings

3.8.7.1.(1) Where the horizontal distance between a portable classroom and a main school *building* on the site is less than 12 m but greater than 3 m, there shall be a 3/4 h *fire separation* constructed between the portable classroom and the main *building*.

(2) Where the horizontal distance between the portable classroom and a main school *building* on the site is 3 m or less, there shall be a 1 1/2 h *fire separation* constructed between the portable classroom and the main *building*.

(3) Where a *fire separation* is required by Sentence (1) and (2), it may be formed by a wall of the main school *building* or a wall of the portable classroom , or combination thereof, provided such walls have the required *fire resistance rating* and all openings, such as doors and windows, are protected in accordance with Subsection 3.1.6.

3.8.7.2. Spatial separation as shown in Subsection 3.2.3. may be used in lieu of the requirements of Article 3.8.7.1.

Reason

With increased use of portable classrooms and limited areas to locate them, some guidelines are required. To regulate siting, and association of portables to main school buildings.

---

194 Code Reference **4.1.9.1.(10).** Related Proposals

Proposal number 336

Proposal

Amend Sentence as follows:

(10) The seismic importance factor, I, shall equal 1.5 for *post-disaster buildings*, 1.3 for schools and community centres, and 1.0 for all other *buildings*.

Reason

Communtiy centres may have even better facilities than schools, such as kitchen facilities and lounges, and may also have the same relatively-large gymnasiums that schools are presumably prized for in a post-disaster situation.

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195 Code Reference **4.1.10.7.** Related Proposals 183 thru 190

Proposal number 190

Proposal

Add Article as follows:

4.1.10.7. Two-level Shelf and Rack System.

The structural design of *two-level shelf and rack system* described in Article 3.2.2.16. shall conform to this Part.

Reason

(See document #183-A thru F.)

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196 Code Reference **4.2.2.1.** Related Proposals

Proposal number 285

Proposal

Delete Article 4.2.2.1. and **substitute** as follows:

4.2.2.1. Subsurface Investigation. Insert wording of Article 4.2.4.2.....

(See also Sentence 4.2.4.1.(1))

Delete Article 4.2.4.2.

Reason

The wording of 4.2.4.2. duplicates what is already specified in 4.2.2.1. Since the wording is more elaborate, and useful, than in 4.2.2.1, use it in place of existing 4.2.2.1.

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197 Code Reference **4.3.3.2.** Related Proposals 94,95,96,97,

Proposal number 93

Proposal

Add Article as follows:

4.3.3.2. Welding of Reinforcing Bars. All fusion welding of reinforcing bars shall be performed only by companies certified by the Canadian Welding Bureau to CSA Standard W186, "Welding of Reinforcing bars in Reinforced Concrete Construction".

Reason

The clarification and ease of use of the Code.

The majority of building departments, consultants, contractors and architects do not have copies of or easy access to all the standards and codes referenced in the B.C. Building Code. By insertion of several new clauses all the users of the Code would know up front what the intent of the Code is and what the implications might be. This would make easier administration/enforcement of the Code and would enhance public safety.

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198 Code Reference **4.3.3.3.** Related Proposals 93,95,96,97,

Proposal number 94

Proposal

Add Article as follows:

4.3.3.3. Welding of Steel Hardware. All fusion welding of steel hardware shall be performed only by companies certified by the Canadian Welding Bureau to CSA Standard W47.1., "Certification of Companies for Fusion Welding of Steel Structures".

Reason

The clarification and ease of use of the Code.

The majority of building departments, consultants, contractors and architects do not have copies of or easy access to all the standards and codes referenced in the B.C. Building Code. By insertion of several new clauses all the users of the Code would know up front what the intent of the Code is and what the implications might be. This would make easier administration/enforcement of the Code and would enhance public safety.

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199 Code Reference **4.3.4.1.** Related Proposals 93,94,96,97, Proposal number **95**

Proposal

Add Sentence to Article 4.3.4.1. as follows:

(2) Fabricators and erectors responsible for making welds for structures fabricated or erected under this Standard shall be certified by the Canadian Welding Bureau to the requirements of CSA Standard W47.1 (Division 1 or Division 2.1), or CSA Standard W55.3, or both, as applicable. Part of the work may be sublet to a Division 3 fabricator; however, the Division 1 or Division 2.1.

The installer of steel deck to be fastened to joists by arc spot welding shall be certified by the Canadian Welding Bureau to the requirements of CSA Standard W47.1, Division 1 or Division 2.1. Part of the work may be sublet to a Division 3 firm providing that the Division 1 or Division 2.1 firm retains responsibility for the sublet work.

(a) The installation welding procedures shall be approved by the Canadian Welding Bureau.

(b) The welders shall have current qualifications for arc spot welding issued by the Canadian Welding Bureau.

Reason

The clarification and ease of use of the Code.

The majority of building departments, consultants, contractors and architects do not have copies of or easy access to all the standards and codes referenced in the B.C. Building Code. By insertion of several new clauses all the users of the Code would know up front what the intent of the Code is and what the implications might be. This would make easier administration/enforcement of the Code and would enhance public safety.

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200 Code Reference **4.3.4.2.** Related Proposals 93,94,95,97, Proposal number **96**

Proposal

Add the following to Article 4.3.4.2.:

Arc Welding shall be performed by a fabricator or erector certified in accordance with CSA Standard W47.1.

Resistance welding shall be performed by a fabricator or erector certified in accordance with CSA Standard W55.3.

Reason

The clarification and ease of use of the Code.

The majority of building departments, consultants, contractors and architects do not have copies of or easy access to all the standards and codes referenced in the B.C. Building Code. By insertion of several new clauses all the users of the Code would know up front what the intent of the Code is and what the implications might be. This would make easier administration/enforcement of the Code and would enhance public safety.

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201 Code Reference **4.3.5.2.** Related Proposals 93,94,95,96, Proposal number **97**

Proposal

Add Article as follows:

4.3.5.2. Welding of Aluminum. All fusion welding of structural aluminum shall be performed only by companies certified by the Canadian Welding Bureau to CSA Standard W47.2M, "Certification of Companies for Fusion Welding of Aluminum".

Reason

The clarification and ease of use of the Code.

The majority of building departments, consultants, contractors and architects do not have copies of or easy access to all the standards and codes referenced in the B.C. Building Code. By insertion of several new clauses all the users of the Code would know up front what the intent of the Code is and what the implications might be. This would make easier administration/enforcement of the Code and would enhance public safety.

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202 Code Reference **6.2.** Related Proposals 148, Proposal number **149**

Proposal

Add Article as follows:

6.2.1.4. (See various tables provided regarding the provision of minimum insulation values for Part 6 buildings in different areas of the Province.)

Editorial Note:- This proposal , if adopted, will require wording in code format, information provided is too extensive to reproduce in this document. It is available for examination and will be presented to the CAC .

Reason

To ensure a minimum R value of insulation to be required on all buildings as defined in B.C. Building Code Part 3.

B.C. is the only major province not currently enforcing minimum R value requirements.

With proven energy conservation measures being enforced, a substantial savings of natural resources is achieved.

Reduced pollution levels reduce the Greenhouse effect and global warming.

(See document #149-A thru F.)

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203 Code Reference **6.2.1.4.(1)** Related Proposals 258 to 274 Proposal number **271**

Proposal

Amend Clause 6.2.1.4.(1)(d) as follows:

Change "CSA C22.1 Canadian Electrical Code Part I" to " B.C. Electrical Code Regulation of the Electrical Safety Act".

Reason

Contradicts Electrical Safety Act.

---

204 Code Reference **6.2.1.13.** Related Proposals 231 to 234 Proposal number **232**

Proposal

Add Article as follows:

6.2.1.13. Energy Management

(1) Except as provided in Sentence (2) all *buildings* shall be designed and constructed to conform to the energy conservation measures in ASHRAE/IES 90.1-1989.

(2) *Buildings* classified as Group C major *occupancies*, not exceeding 3 storeys *in building height* and used as Apartments, Condominiums, Boarding Houses, Residential Clubs, Residential Colleges, Convents, Dormitories, Houses, Lodging Houses, Monasteries, and Residential Schools shall conform to the appropriate requirements for energy saving contained in Part 9.

Appendix

Add Sentence as follows:

A-6.2.1.13.(2) Energy Management. The appropriate requirements in Part 9 include all the energy saving related measures which would normally be applied to a building of similar usage and construction, if it was constructed under Part 9 requirements.

Reason

The objective of this submission is to amend the British Columbia Building Code in order to establish minimum energy efficiency standards for buildings in the province. The submission reviews the issue of energy standards for buildings by examining the importance of the standards to the province, discussing the specific standards being proposed, the cost-effectiveness of the standards and the probable energy savings to the province from introducing the standards.

(See document 20 Pages).

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205 Code Reference **6.2.2.3.(2)** Related Proposals Proposal number **346**

Proposal

Amend Sentence as follows :

(2) Mechanical ventilation systems provided in accordance with Clause (1)(a) shall be controlled by carbon monoxide monitoring devices complying with *.

* *Editorial Note:- Title of Standard not supplied.*

Reason

(1) Where there is a standard available for life-safety devices, it should be used to ensure that such devices meet such a recognized minimum standard. Without such a standard, every manufacturer sets their own,if any.

(2) Then this was proposed for the current edition of the B.C. Building Code, and discussed at a Provincial Building Committee Meeting, I was led to believe by the Chairman that there may be a standard for carbon monoxide monitoring devices, in which case it would be specified in the B.C.B.C. When the B.C.B.C. was published there was no standard specified.

(3) The standard that may have existed was understood to be a mine safety standard.

(4) From a subsequent discussion with a senior representative of CSA I understood that their CSA 192 "Household Fuel Gas Detectors" could be perhaps modified to suit, if necessary.

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206 Code Reference **6.2.4.2.(1)** Related Proposals Proposal number **70**

Proposal

Delete Table 6.2.4.A. and **substitute** the following:

Table 6.2.4.A
Forming Part of Sentence 6.2.4.2.(1)

MINIMUM METAL THICKNESS OF DUCTS, mm			
Shape and Location of Duct	Size of Duct mm	Galvanized Steel	Aluminum
Round ducts serving single *dwelling units*	125 or under	0.254	0.30
All round ducts other than above and enclosed rectangular ducts	350 or under	0.33	0.30
	over 350	0.41	0.41
Exposed rectangular ducts having a required clearance of up to 12 mm and serving *single family dwelling units*	350 or under	0.33	0.41
	over 350	0.41	0.48
Other exposed rectangular ducts	350 or under	0.41	0.41
	over 350	0.48	0.48
Column 1	2	3	4

Reason

See document (4 pages)

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207 Code Reference **7.1.2.1.** Related Proposals **Proposal number 304**

Proposal

Delete and **substitute** as follows:

7.1.2.1. Every *plumbing system* shall be designed and installed in conformance with the British Columbia Plumbing Code

Reason

This Article could be "cleaned up" by deleting references to Municipal regulations and to the Canadian Plumbing Code.

The proposed rewording may need to be fine-tuned to specify the particular edition of the B.C. Plumbing Code, but perhaps that is not necessary if clause 1.(b) of B.C. Reg. 192/87 . . . as may be amended . . . looks after this.

---

208 Code Reference **8.2.1.3.(1).** Related Proposals **Proposal number 282**

Proposal

Amend Sentence as follows:

(1) When a construction or demolition activity may constitute a hazard to the public **and is located 2 m or more from a *public way***, a strongly constructed fence, boarding or barricade not less than 1.8 m high shall be erected between the site and the *public way* or open sides of a construction site.

Reason

Whether the activity is more than 2 m, or less, shouldn't make any difference in providing this protection.

I would speculate that the present wording states "2 m or more" because Article 8.2.1.2. would require a covered way, but there is no harm in expanding 8.2.1.3.(1) to delete any reference to distance, and is intended to reduce ambiguity.

---

209 Code Reference **9.4.2.2.(1)** Related Proposals **Proposal number 28**

Proposal

Delete the following from Sentence 9.4.2.2.(1):

Ss = the ground snow load listed in Chapter 1 of the Supplment to the NBC 1990, and
Sr = the associated rain load listed in Chapter 1 of the Supplement to the NBC 1990.

and **Substitute** the following:

Ss = is the ground snow load in kPa, determined in accordance with Subsection 2.2.1., and
Sr = is the associated rain load in kPa, determined in accordance with Subsection 2.2.1.

Reason

Present wording would force local authority to use Supplement #1 values instead of values established locally under Subsection 2.2.1.

Suggested wording is simply copied from Part 4 which gives correct reference to Subsection 2.2.1.

---

210 Code Reference **9.5.7.1.** Related Proposals **Proposal number 152**

Proposal

Amend Article as follows:

9.5.7.1. In every *dwelling unit* an enclosed space of sufficient size shall be provided to accommodate a bathtub or shower, water closet and lavatory.

Reason

We believe homeowners should have the choice between a bathtub or a shower.

---

211 Code Reference **9.6.3.2.** Related Proposals **Proposal number 342**

Proposal

Delete Article 9.6.3.2.

Reason

(1) The doorway sizes of subsection relate to doors within dwelling units, except for the public washroom doors singled out in Article 9.6.3.2.

(2) Public washroom doors could be safely deleted form Article 9.6.3.2, since their min. num width & height are covered as all other non-dwelling unit doors, in subsection 9.9.6.

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212 Code Reference **9.6.3.3.** Related Proposals **Proposal number 153**

Proposal

Delete Article 9.6.3.3.

Reason

This clause should be omitted as it is included in the handicap section.

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213 Code Reference **9.6.5.7.** Related Proposals **Proposal number 39**

Proposal

Add Article as follows:

9.6.5.7. Door and Window Glazing. Glass in doors, sidelights, and windows that extend to less than 300 mm from the floor shall be safety glass [of the laminated or tempered type conforming to CAN2-12.1, "Glass Safety, tempered, or laminated"] or shall be of wired glass [conforming to CAN2-12.11, "Glass, Wired Safety"].

Editorial Note:- This wording in brackets will probably be edited out since already covered by code.

Reason

Small children (toddlers) can fall and put their head through the window getting badly cut. In multi-paned windows the glass is thin enough to break with that much impact. (I was a child who fell head first into a floor level window and was badly cut).

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214 Code Reference **9.6.6.3** Related Proposals

Proposal number **37**

Proposal

Amend Article 9.6.6.3 as follows:

Doors described in 9.6.4.5. and which are swing type shall be provided with a 5 pin cylinder deadbolt lock with a minimum 25 mm throw, and be protected with a solid or hardened free-turning ring or bevelled cylinder housing. operable from the interior without the use of keys or other similar devices. Inactive leaps of double doors shall be provided with heavy duty bolts, top and bottom, with a minimum 25 mm throw.

(Editorial Note:- This wording is based on the wording of Article 9.6.6.1. B.C.B.C. 1985, it should be assumed that the final wording will incorporate the exception made in the 1990 N.B.C. for Article 9.6.6.10.)

Reason

It is my opinion that all exterior doors shall be made accessible for egress, even through not required. If an exterior door is in place, it must be assumed it can lead to safety. A double keyed lock would prevent exit if the key was not available for use.

---

215 Code Reference **9.6.6.5.** Related Proposals

Proposal number **145**

Proposal

Amend Article 9.6.6.5. (B.C.B.C.) as follows:

.....and shall be fastened to metal frames with minimum **12 mm #12** 10 mm #8 machine screws.

Reason

This is in response to Sentence 9.6.6.5. (fastening of strike plates to metal frames) of the 1985 B.C. Building Code, and is submitted jointly by Builders Hardware Manufacturers Association of Canada and Canadian Steel Door & Frame Manufacturers Association. (See document 27 pages.)

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216 Code Reference **9.6.6.8.** Related Proposals

Proposal number **146**

Proposal

Add Article as follows:

9.6.6.8. Alternative Test Procedure. Doors, frame and hardware which conform to a security level of at least grade 10 as described in the annex to ASTM F476, "Standard Test Methods for Security of Swinging Door Assemblies", are not required to conform to Articles 9.6.6.1, 9.6.6.4. and 9.6.6.5.

Editorial Note:- This proposal is based on the 1985 B.C.B.C. security provisions and is similar to Article 9.6.6.10. N.B.C.

Reason

The following is submitted by the Builders Hardware Manufacturing Association of Canada.

Article 9.6.6.1. is extremely limiting with respect to style and design, and there are many products on the market in the form of decorative hardware which can provide excellent security but would not meet the criteria set out in Article 9.6.6.1.

We believe that measured performance to a recognized standard is more valid than specifications that refer only to materials and/or component design. Both the National and the Ontario Building Codes have added Articles similar to the above to their Codes in recognition of this pilosophy.

Because of the limitations incurred by the current article, in 1988 Weiser Inc. had to resort to the appeal process because some of it's more popular locksets were deemed not to meet the Code, and yet the products were capable of providing excellent security.

It is our contention that the presence of a "solid or hardened free turning ring, etc." does not necessary ensure security, but performance to a particular standard surely does.

Finally, in the interest of uniformity across the Country, it would be desirable for all jurisdictions to work to the same guidelines. It is not practical to expect manufacturers to provide unique products for different sections of the country.

(See- Article 9.6.6.10. NBC, Article 9.6.6.12.- Ontario Building Code Proposal, ASTM F476-1984, Various catalogues.) (See Document #146-A thru Y.)

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217 Code Reference **9.7.1.3.** Related Proposals 29,36

Proposal number **32**

Proposal

Amend Sentences 9.7.1.3. (1) & (2) as follows:

(1) Except where a bedroom area door provides access directly to the exterior, each bedroom area shall have, for escape in an emergency, **not less than** at least one outside window openable from the inside without the use of tools or special knowledge.

(2) Such windows **referred to in Sentence (1)** shall provide an unobstructed opening of not less than 380 mm in height and width and 0.35 m2 in area. **(See Article 9.7.1.4.)**

Add Sentence 9.7.1.3.(3) as follows:

(3) Window sill height shall not exceed more than 1 m above the floor.

Reason

(A) To clarify reason for code requirement of window.

(B) A skylight openable by a crank can qualify but is of no use without external help or interior ladder for emergency escape.

(C) The Code requirement for emergency escape from a window not readily usable from interior and exterior is useless.

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218 Code Reference **9.7.1.3.** Related Proposals 29,32

Proposal number **36**

Proposal

Amend Sentences 9.7.1.3. (1) & (2) as follows:

(1) Except where a bedroom door provides access directly to the exterior, each bedroom shall have **not less than** at least one outside window openable from the inside without the use of tools or special knowledge.

(2) Such windows **referred to in Sentence (1)** shall provide an unobstructed opening of not less than 380 mm in height and width and 0.35 m2 in area. **(See Article 9.7.1.4.)**

Add Sentences 9.7.1.3.(3) & (4) as follows:

(3) The openable section of the required window shall have a sill height no more than 1200 mm or no less than 600 mm from finished floor level with no glazing located under the openable section.

(4) Locking hardware shall not be located more than 1300 mm from finish floor level.

Reason

The intent of this change is to prohibit top opening bedroom windows which I feel an adult or a child could not climb through without possibly breaking through the lower glazing which is not the intent.

The hardware should be located so a child could feasibly unlock the window in an emergency.

---

219 Code Reference **9.7.1.3.** Related Proposals 32,36 Proposal number **29**

Proposal

Add Sentence 9.7.1.3.(3) as follows:

(3) The bottom of the opening referred to in Sentence (2) shall be at a height of not more than 1.2 m above the floor.

Reason

The current requirement does not control the location of either the window or the opening in relation to the floor level. Unless this opening is within a reasonable height of the floor its purpose is negated. A maximum height of 1.2 m for the bottom of the opening has been specified since this height not only covers most normal window locations but is accessible by the average person in an emergency situation.

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220 Code Reference **9.7.1.5** Related Proposals 231 to 234 Proposal number **233**

Proposal

Delete Article and **substitute** as follows:

9.7.1.5. Thermal Glazing

(1) Except as required in Sentence (2), in buildings intended for use on a continuous basis during the winter months, windows which separate heated space from unheated space or from the exterior shall be provided with double glazing having a minimum 12 mm space between panes.

(2) Windows referred to in Sentence (1) shall be provided with triple glazing, having a minimum 8 mm space between panes, in areas where the number of degree days below 18DC, is greater than 5500, as established by Subsection 2.2.1.

(3) A storm sash may be substituted for one of the layers of glazing required by Sentences (1) or (2).

(See Appendix A)

Add Article as follows:

9.7.1.6. Window and Skylight Areas Where the total window and skylight area (based on rough opening size) exceeds 15% of the total habitable floor area of the building, extra thermal insulation measures shall be taken to compensate for the heat loss from this additional glazed area.

(See Appendix A)

Appendix

Amend Article A-9.7.1.5. as follows:

Change heading as follows:- **Double** to **Thermal**

Add at end of Article:- For similar reasons window and skylight frames should have a thermal resistance at least equal to the type of glazing being installed. Wood and plastic frames generally provide this thermal resistance without additional provisions. Metal frames without an effective thermal break can not only reduce the overall thermal efficiency of the window but also result in significant amounts of condensation. Current window standards do not address this problem adequately but it is anticipated that future standards will determine the true thermal performance of the entire window assembly, not just the glazed portion.

Add Article as follows:

A-9.7.1.6. Window and Skylight Areas. Where the window / skylight to floor ratio of 15% is exceeded some additional energy conservation measure(s) must be taken and the authority having jurisdiction satisfied that the overall designed heat loss of the building remains as if the glazed area was at the maximum of 15%. This could be achieved by using better thermally glazed windows e.g. substituting triple glazing where only double glazing required by Article 9.7.1.5. or alternatively increasing the thermal resistance of an other building component above the value required by Table 9.25.2.A. to compensate for the added heat loss of the additional window area e.g. increasing minimum attic insulation RSI value.

Reason

The objective of this submission is to amend the British Columbia Building Code in order to establish minimum energy efficiency standards for buildings in the province. The submission reviews the issue of energy standards for buildings by examining the importance of the standards to the province, discussing the specific standards being proposed, the cost-effectiveness of the standards and the probable energy savings to the province from introducing the standards. (See document 20 Pages).

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221 Code Reference **9.7.3.3.** Related Proposals 69 Proposal number **52**

Proposal

Add Article as follows:

9.7.3.3. Glass for Skylights. Glass in non-factory built skylights shall be of the laminated or tempered type. [conforming to CAN2-12.1, "Glass, Safety, Tempered or Laminated"] or shall be of wired glass. [conforming to CAN2-12.11 "Glass, Wired, Safety"].

Editorial Note:- This wording in brackets will be edited out since already covered by code.

Reason

The Code addresses only factory built skylights. Overhead non-safety glass if broken by a rock, ball, etc, could fall in large sharp pieces seriously injuring anyone underneath.

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222 Code Reference **9.7.6.** Related Proposals Proposal number **71**

Proposal

Delete Article 9.7.6.3. (B.C.B.C.)

Reason

See document (3 pages)

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223 Code Reference 9.7.7.3. Related Proposals 52 Proposal number 69

Proposal

Add Article as follows:

9.7.3.3. Glass for Non-factory Built Skylights. The inside or lower lite of an inclined sealed unit of insulating glass shall be laminated glass with a minimum 0.75 mm (.030 inch) PVB interlayer, conforming to CGSB CAN2-12.8-M78, the outer lite of glass shall be heat treated glass (fully tempered or heat strengthened) conforming to CGSB CAN2-12.1-M79.

Reason

See letter dated January 24,1990 (2 pages)

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224 Code Reference 9.8.7.7. Related Proposals Proposal number 108

Proposal

Amend Article 9.8.7.7. as follows:

9.8.7.7. Obstructions. Handrails shall be so constructed that there will be no obstructions on or above them to break a handhold except where the handrail is interupted by newels at changes in direction. The handrail shall be graspable along the entire length with a maximum 50 m.m and minimum 35 mm circular or oval configuration.

Reason

A clear requirement of approved handrails is required to:

(1) ensure graspability by all users,
(2) obtain uniformity by regulatory authorities (building inspectors),
(3) eliminate stair cappings, 2" x 4" and 2" x 6" on flat or on edge as an accepted handrail configuration,
(4) to ensure safe use of stairs by elderly, children, and physically impaired.

---

225 Code Reference 9.8.8.1. Related Proposals Proposal number 308

Proposal

Add Sentences as follows:

Proponent's note:- It is proposed that either one or the other, or both, of the following Sentences should be added to Section 9.8.8.

(6). Exterior wood guards shall not be directly connected flush to the face of wood deck fascia, boxing joists or beams, unless all wood at the connection is suitably treated with a wood preservative.

(7). The connection of wood guards directly to the face of wood deck fascia, boxing joists and wood beams shall be formed to protect the joint and wood members from moisture damage.

Reason

(See documents #308-A thru E).

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226 Code Reference 9.8.8.2. Related Proposals Proposal number 105

Proposal

Amend Article 9.8.8.2. as follows:

(1) Except as provided in Sentences (2) to (5), all required guards, including those .....

(2) Required guards for porches, decks, ...
(3) Except as provided in Sentence (4), required guards for stairs .....
(4) Required guards for stairs .....

Reason

To remain consistent with wording in Article 9.8.8.2.(5)

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227 Code Reference 9.8.8.4 Related Proposals Proposal number 43

Proposal

Amend Article as follows:

9.8.8.4. Openings in Guards. Openings through a required *guard* on a balcony or an *exit* stair, **except an *exit* stair serving not more than one *dwelling unit*,** shall be of a size as to prevent the passage of a spherical object having a diameter of 100 mm in *residential occupancies* and 200 mm in other occupancies, unless it can be shown that the location and size of such openings which exceed this limit do not represent a hazard.

Reason

Large opening through a guard on a stair are dangerous to small children.

---

228 Code Reference 9.8.8.5. Related Proposals Proposal number 106

Proposal

Amend Article 9.8.8.5. as follows:

All required guards around exterior porches, decks, landings and balconies of buildings .....

Reason

This Article should cover all types of porches etc., not just balconies only. Also to remain consistent with wording in 9.8.8.2.(2)

---

229 Code Reference **9.9.6.4.(1).** Related Proposals **Proposal number 340**

Proposal

Delete Sentence and **substitute** as follows:

(1) Every door in a *means of egress* shall

(a) *(unchanged)*

(b) *(unchanged)*

(c) *(unchanged)*

Reason

(1) As it stands , Sentence 9.9.6.4.(1) refers to doors from suites. Doors within suites should also meet the same minimum requirements.

(2) Rather than "pussyfoot around" by naming various locations for doors, let's "go all the way", and specify this for all doors in a means of egress. There don't appear to be any that warrant exemption, keeping in mind this deals with "means of egress".

---

230 Code Reference **9.9.6.5.** Related Proposals **Proposal number 328**

Proposal

Delete Article 9.9.6.5. and **sustitute** as follows:

9.9.6.5. Door Swing.

(1) Except as provided in Article 3.3.1.11

(a) all doors in a *means of egress* shall swing on a vertical axis, and

(b) every door that provides *access to exit* from a room or *suite* having an *occupant load* of more than 60 persons , and every door that is located within a corridor that is required to be separated from the remainder of the *floor area* by a *fire separation* shall swing in the direction of *exit* travel and shall not open onto a step.

Reason

All doors in a means of egress should swing on a vertical axis, not just those doors singled out in the current Sentence 9.9.6.5.(1). Otherwise doors within or from a room or suite having an occupant load of less than 60 persons aren't restricted from being, say, overhead doors.

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231 Code Reference **9.9.6.8.** Related Proposals **Proposal number 339**

Proposal

Add to Article as follows:

Except as permitted in Sentence 3.4.6.15.(4) for electromagnetic locking systems, *exit* doors and doors to . . .

Reason

To specifically mention in Part 9 that electromagnetic locking systems are permitted.

---

232 Code Reference **9.9.9.1.** Related Proposals **Proposal number 17**

Proposal

Delete Sentences 9.9.9.1. (1), (2) and (3) and **substitute** the following:

Every *dwelling unit* containing more than 1 *storey* shall have a sufficient number of *exits* or egress doors, so that it shall not be necessary to travel up or down more than 1 *storey* to be served by

(a) an egress door to a *public corridor*, enclosed *exit* stair or exterior passageway, or

(b) an *exit* doorway having direct access to a balcony.

Reason

Open interior stairwells, in a fire situation, act as a chimney where a fire usually exits via the stairwell to the upper floor(s). It is irresponsible to place people in this dangerous environment where the interior stairs are the only means of escape. The Building Code accepts a window as another means of escape; however, this requires a person to stand up in a hostile environment of smoke and fire gasses to then JUMP down to the ground. History has shown that people are overcome by the smoke while making an attempt to escape by way of the window when the stairs were involved in fire.

---

233 Code Reference **9.9.9.1.(1).** Related Proposals **Proposal number 292**

Proposal

Delete Sentence and **substitute** as follows:

(1) Except as provided in Sentences (2) and (3), a single *exit* is permitted from a *dwelling unit* provided the *exit* is an exterior doorway not more than 1.5 m above adjacent ground level and

(a) it is not necessary to travel up or down more than 1 storey to reach the *exit* door, or

(b) the uppermost floor level opens to a balcony not more than 6 m above adjacent ground level.

Reason

(1) To eliminate reference to "sufficient number" of exits or egress doors. The number of doors is no more relevant than the colour of a handrail. This Sentence pertains to location of exit or egress doors, not to number.

(2) To reconcile the wording of 9.9.9.1.(1) with what appears to be more or less its counterpart in Part 3 (Sentence 3.3.4.4.(3).)

---

234 Code Reference **9.9.10.** Related Proposals

Proposal number **298**

Proposal

Delete Subsection and **substitute** as follows:

9.9.10. Exit Signs

9.9.10.1 *Exit signs shall conform to the requirements in Subsection 3.4.5.*

Reason

(1) The exit sign requirements should be the same for Part 9 and Part 3 buildings. Hence Subsection 9.9.10 could simply reference Subsection 3.4.5. rather than repeat it.

(2) To restore what is in the current B.C. Building Code.

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235 Code Reference **9.10 1.** Related Proposals 22, 24 & 25

Proposal number **23**

Proposal

Add Article as follows:

9.10.1.?. Sprinklering. All single family *dwelling units* shall be *sprinklered.*

Reason

Four page document on " Installation of Sprinkler Systems in all Group B & C Occupancies ". Topics discussed include quick response sprinkler heads, fire scenario and benefits and cost effectiveness.

(Document #22A - 4 pages)

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236 Code Reference **9.10.1** Related Proposals 22, 23 & 25

Proposal number **24**

Proposal

Add Article as follows:

9.10.1.?. Sprinklering. All multiple residential *buildings* classified as Group C shall be *sprinklered.*

Reason

Four page document on " Installation of Sprinkler Systems in all Group B & C Occupancies ". Topics discussed include quick response sprinkler heads, fire scenario and benefits and cost effectiveness.

(Document #22A - 4 pages)

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237 Code Reference **9.10.1.13.** Related Proposals 7

Proposal number **9**

Proposal

Add Article as follows:

9.10.1.13. Elevator Signage. Every passenger elevator hoistway entrance shall have a permanent sign acceptable to the *authority having jurisdiction* with the following wording:-

" In case of fire use exit stairs. Do not use elevator."

Reason

Many developers will not post signs unless there is a requirement for such signage. Fire statistics show that people have been killed during fires while using elevators. There should be mandatory signage requirements, warning people not to use the elevator if a fire develops.

---

238 Code Reference **9.10.5.1 (2)** Related Proposals 258 to 274

Proposal number **272**

Proposal

Amend Sentence as follows:

(2) A wall or ceiling membrane forming part of an assembly required to have a *fire-resistance rating* may be pierced by openings for electrical and **similar service outlet boxes** equipment in accordance with the B.C. Electrical Code Regulation and must be **provided such outlet boxes** are tightly fitted, and preserve the integrity of the *fire seperation*.

Reason

Tradespersons doing electrical work only use the Electrical Code. It is pragmatic to specify restrictions in this code not NBC.

---

239 Code Reference **9.10.9.6** Related Proposals 258 to 274

Proposal number **273**

Proposal

Amend Sentences (2) to (6) as follows:

Change ". . ., except that electrical . . ." to ". . . , except where permitted under the B.C. Electrical Code Regulation . . ."

Editorial Note:- The proponent 's proposal relates to the 1985 B.C.Code wording in Article 9.10.9.10., the 1990 N.B.C. wording would require alterations to this proposal.

Reason

To ensure that trades doing Electrical work are aware of requirements and to ensure that electrical inspection takes this into account.

---

240 Code Reference **9.10.9.8.** Related Proposals 109 Proposal number 111

Proposal

Amend Article as follows:

9.10.9.8. Combustible Construction Support. *Combustible construction* that abuts on or is supported by a ***noncombustible*** *fire separation* shall be constructed so that its collapse under fire conditions will not cause the collapse of the *fire separation*.

Reason

The word noncombustible has been deleted from the Article. The current Article singles out the need to provide added protection to construction where there is the possibility of damage to a noncombustible fire separation should the construction collapse. Regardless of the type of construction of the fire separation, it should be protected from damage due to collapse of other construction. In such a collapse, damage would almost certainly be greater to a steel or wood frame construction fire separation and more likely to cause it to fail as opposed to one of masonry or concrete. Therefore, requiring added protection for construction only where noncombustible fire separations may be damaged is inappropriate. Such a requirement should apply to combustible fire separations as well.

241 Code Reference **9.10.12.5.** Related Proposals Proposal number 16

Proposal

Delete Article 9.10.12.5.

Reason

This Section virtually eliminates any possibility of ventilating the attic space through the soffit in multi unit residential buildings. Perforated aluminum soffit is no longer usable.

242 Code Reference **9.10.13.17** Related Proposals 8 Proposal number 10

Proposal

Add Article as follows:

9.10.13.17. Closure Signage Every door used as a *closure* shall have a permanent sign acceptable to the *authority having jurisdiction* posted on the visible side of the door when it is in the open position with the words " Fire door keep closed", except where the door

(a) is located within a *suite*, or
(b) serves as an *access to exit* from a *suite*.

Reason

Many developers will not post signs unless there is a requirement for such signage. According to our Municipal Prosecutor, we cannot lay charges for wedging separation doors open unless there are signs telling the occupants to keep the doors closed. The signage should be required at the time of building construction, not after occupancy. The B.C. Fire Code Reg. does not require this signage.

243 Code Reference **9.10.14.5.** Related Proposals Proposal number 330

Proposal

Delete Article and **substitute** as follows :

9.10.14.5 Openings in Exposing Building Faces. Openings in every *exposing building face* shall be protected by *closures* of other than wired glass or glass block, whose *fire-protection rating* is in conformance with the *fire-resistance rating* required for the *exposing building face*.

Reason

(1) The present wording is misleading.
Wired glass or glass block do not qualify as closures for spatial separation purposes even when the limiting distance exceeds 1.2 m. They only perm the area of unprotected openings to be doubled.
(2) The proposed rewording is the same as I have proposed also for Article 3.2.3.5.

244 Code Reference **9.10.15.1.(1)** Related Proposals Proposal number 214

Proposal

Amend Sentence 9.10.15.1.(1) as follows:

(1) Concealed spaces in **interior** walls, **ceiling and crawl spaces** shall be separated by fire stops from concealed spaces in ceiling, **exterior walls and** attic, roof or crawl spaces.

Reason

The present wording is not clear of the intent to firestop vertical spaces for horizontal spaces.
The present wording, in effect, requires interior walls to be separated by firestorps from exterior walls which is not the intent.
See "Uniform Building Code" as an example of firestop requirements.
(Seee document 1 page.)

245 Code Reference **9.10.18.2. (1)** Related Proposals 61 Proposal number 62

Proposal

Delete Sentence 9.10.18.2. (1) and **Substitute** the following:
(1) In areas where kitchen or bathrooms are located in the close proximity of the bedrooms, smoke alarms may be located inside each bedroom, providing the smoke alarms are interconnected. (The activation of one alarm will cause all alarms within the dwelling unit to sound.)

Reason

In most apartment suites and mobile homes the smoke alarms are subject to false alarms more frequently than normal, because of the close location of the steam from showers and cooking odors from the kitchen, in relation to the hallway. In a recent survey, done from several apartment blocks, the smoke alarm wires were disconnected or the batteries were removed due to excessive false alarms. In dwelling units under 1000 square feet smoke alarms located in the bedrooms may reduce the false alarms.

246 Code Reference **9.10.18.2.(1)** Related Proposals

Proposal number **215**

Proposal

Amend Sentence 9.10.18.2.(1) as follows:

(1) *Smoke alarms* within *dwelling units* shall be installed in each sleeping room and between each sleeping area and the remainder of the *dwelling unit;* and where the sleeping areas are served by hallways, the *smoke alarm* shall be installed in the hallway.

Reason

Studies in the United States have shown with the installation of smoke alarms in dwellings, fire dead have decreased dramatically and the next step to reduce the lose of life even greater is to install some alarms in sleeping rooms.

A lot of fires occur in sleeping rooms and with many people have the sleeping room door closed, quick and early warning is not occurring as the smoke alarms in the hallway are not being activated early enough.

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247 Code Reference **9.10.18.2.** Related Proposals

Proposal number **45**

Proposal

Add Sentence 9.10.18.2.(3) as follows:

(3) Where a *dwelling unit* consists of more than one *storey*, at least one *smoke alarm* hall be installed on each *storey*.

Reason

With doors closed between stories of a dwelling, considerable smoke and fire can build up before an alarm is activated on a different storey.

---

248 Code Reference **9.10.19** Related Proposals

Proposal number **11**

Proposal

Add Article as follows:

9.10.19.?. Water Supply (1) In areas where fire protection is provided, the unobstructed paths of travel for the firefighter from the fire hydrant to the principal entrance of the *building* shall not exceed 90 m.

(2) The maximum distance between fire hydrants, in areas where fire protection is provided, shall be no greater than 160 m.

Reason

Part 9 does not require a water supply for fire fighting.

Stringent requirements are needed for subdivision development.

The 1985 Appendix A-3.2.5.2. is not enforceable.

---

249 Code Reference **9.10.19** Related Proposals 5

Proposal number **12**

Proposal

Add Article as follows:

9.10.19.?. Fire Fighting Assumptions. Where a *building* cannot fully comply with the basic fire fighting assumptions made in the code the *authority having jurisdiction* may require additional fire protection measures, such as *sprinklering*, to compensate for the deficiency. (See A-3. Fire Fighting Assumptions, in Appendix A.)

Reason

A-3 Fire Fighting Assumptions. Paragraph 3, last sentence, considers sprinklers as an option, but does not give the Authority of requiring sprinklers.

In many municipalities, because of response time, steep access and budget restraints for more Fire Halls and manpower, fire sprinklers would provide additional protection.

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250 Code Reference **9.10.19.** Related Proposals 1 , 6, 13,20,44

Proposal number **13**

Proposal

Add Article as follows:

9.10.19.? Water Supply. The water supply for fire fighting shall be provided for every *building* as per the Fire Underwriters Survey, latest edition of Water Supply for Public Fire Protection.

Reason

There is no water supply requirement for Part 9 buildings.

In Municipalities where there is a fire fighting water delivery system, the system should be designed as per the Fire Underwriters Survey, latest edition of Water Supply for Public Fire Protection.

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251 Code Reference **9.10.19.** Related Proposals 1, 6, 13,44

Proposal number **20**

Proposal

Add Article as follows:

9.10.19.?. Water Supplies. An adequate water supply for fire fighting shall be provided for every *building* (see A-3 Fire Fighting Assumptions in Appendix A)

Reason

Part 9 does not directly address water supplies for fire fighting except under the title of Part 9 - Housing and Small Buildings in the B.C. Building Code.

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252 Code Reference **9.10.19.3.** Related Proposals

Proposal number 14

Proposal

Delete Article 9.10.19.3. and **substitute** the following:

9.10.19.3. Emergency Vehicle Access

(1) Access for fire department equipment shall be provided to each *building* by means of a *street*, private roadway or yard.

(2) Where a required access route is provided by means of a roadway or yard, the design and location of that portion of the roadway or yard required for fire department use shall

(a) have a clear width of at least 6 m,
(b) have a centre line radius of not less than 12 m,
(c) have an overhead clearance of at least 5 m,
(d) have a change of gradient of not more than 1 in 12.5 over a minimum distance of 15 m,
(e) be designed to support the expected loads imposed by fire fighting equipment and be surfaced with concrete, asphalt or other material,
(f) have turn around facilities for any dead-end portion of the access, and
(g) be connected with a public thoroughfare.

Reason

Part 9 does not provide a clear enforcesable definition for fire fighter access.

A stringent definition is required in areas where fire protection is provided, as the current Code guideline and appendix create a conflict for access to the Planning Department, Engineering and Parks Departments.

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253 Code Reference **9.11.2.1.(1)** Related Proposals

Proposal number 101

Proposal

Amend Sentence 9.11.2.1. (1) as follows:

(1) Except as provided in Sentence (2), every *dwelling unit* shall be separated from every other space in a *building* in which noise may be generated by a construction providing a sound transmission class rating of at least 50 55, measured in accordance with Subsection 9.11.1. or listed in A-9.10.3.1. in Appendix A.

Reason

The 1990 NBC, Table A-9.10.3.A. contains several walls with relatively high transmission loss ratings compared to the 1985 Code. These walls are inferior to walls listed in the 1985 Code but meet the current STC 50 requirement of the 1985 B.C. Building Code. To avoid a reduction in existing building standards in the Province, we recommend that the 1990 B.C. Building Code, Article 9.11.2.1., be upgraded to STC 55 between dwelling units.

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254 Code Reference **9.13.5.3.(1)** Related Proposals

Proposal number 154

Proposal

Delete Article 9.13.5.3. and **substitute** as follows:

9.13.5.3. Where a separate interior cladding is applied to a concrete or unit masonry wall which is in contact with the soil, or where wood members are applied to such walls for the installation of insulation or finish, the interior surface of the foundation wall and top shall be dampproofed.

Reason

Ensures moisture will exit out of top 8" above grade.

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255 Code Reference **9.13.6.2.** Related Proposals 114, 115

Proposal number 112

Proposal

Delete Article 9.13.6.2. and **substitute** the following:

9.13.6.2. Dampproofing below the Slab.

(1) Except as required in Sentence (2), when installed below the slab, dampproofing shall consist of
(a) polyethylene not less than 0.15 mm thick placed beneath at least 50 mm of sand placed beneath the slab, or
(b) not less than 100 mm of course granular material containing not more than 10 per cent of material that will pass a 4 mm sieve placed beneath the slab.

(2) In areas where soil gas infiltration has been documented, dampproofing below the slab shall consist of providing the measures set forth in both Clauses 9.13.6.2.(1)(a) and (b). (See Appendix A).

(3) Joints in dampproofing described in Clause (1)(a) and Sentence (2) shall be lapped not less than 300 mm.

Reason

The inclusion of dampproofing provisions, which in certain geographic locations also aid in restricting soil gases, in particular radon, from entering the basement living space is sound. The intent of the current requirement is, in part, to prevent or reduce the entry or radon gas into a dwelling unit. The use of a polyethylene barrier beneath the slab is a most effective method of preventing soil gas infiltration. Unfortunately, concrete slabs poured directly on polyethylene are subject to more cracking than such slabs poured directly on soil or sand. Providing a 50 mm layer of sand between the polyethylene and the underside of the slab would help to alleviate this problem and it would also help to protect the polyethylene when the concrete is being placed. In locations where soil gas infiltration is not a problem, the option of providing a 100 mm granular layer as dampproofing, as was permitted by the 1980 NBCC, should be permitted. Where soil gas infiltration is a problem, both the polyethylene barrier and the 100 mm granular layer for ventilation should be provided.

---

256 Code Reference **9.14.3.3(1).** Related Proposals

Proposal number 34

Proposal

Amend Sentence 9.14.3.3.(1) as follows:

(1) Drain tile or pipe shall be laid on undisturbed or well compacted *soil* so that the top of the tile or pipe is below the bottom of the floor slab or, crawlspace ground cover of Subsection 9.18.6. and the dampproofing membrane of Article 9.13.1.2(2)

Reason

To remove ambiguity of tile placement in relation to dampproofing membranes and below grade floor bases.

Vapour/moisture control is negated by incorrect placement of drain tile relative to dampproofing measures. A common field practice error is placing dampproofing membrane at approximately the same level as the subsurface drainage tile base.

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257 Code Reference **9.14.3.3(4)** Related Proposals

Proposal number 33

Proposal

Amend Sentence 9.14.3.3(4) as follows:

(4) The top and sides of drain pipe shall be covered with not less than 150 mm of crushed stone or other course, clean, granular material containing not more than 10 percent of material that will pass a 4 mm sieve, the maximum size of cover aggregate shall not exceed 20 mm. silty type backfill shall require cover aggregate to be protected with building paper.

Reason

No maximum code limit on cover aggregate size results in:

(a) non-uniformity of code interpretation for this item from jurisdication to jurisdiction,
(b) oversized aggregate permits severe silting problems and drain tile blockage,
(c) many areas permitting aggregate up to 75 mm in size for drain tile cover.
(d) disturbed silty clays and sand/gravel backfill silt drain tile easily in early stage of backfill and wetting.

(SEE INFO.SHEET #33A)

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258 Code Reference **9.16.2.1.** Related Proposals 112, 115

Proposal number 114

Proposal

Delete Article 9.16.2.1.

Reason

The current requirement in the 1990 NBCC which applies to all dwelling units appears to be excessively onerous. The intent of the current requirement is to facilitate the provision of below-slab ventilation in the event such measures prove necessary to reduce the entry of radon gas into a dwelling unit. The change we have proposed for Article 9.13.6.2. deals with this problem and makes this Article redundant.

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259 Code Reference **9.18.3.4.** Related Proposals

Proposal number 155

Proposal

Delete Article 9.18.3.4.

Substitute the following:

We recommend a 4" sealed pipe be put in a central location in the house running from the crawlspace right up through the roof.

Editorial Note:- This proposal , if adopted, will require re-wording in code format.

Reason

Cross ventilation does not work. With cross ventilation, once the house is draft free the air that would go up the plumming stack, cannot.

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260 Code Reference **9.18.3.5.** Related Proposals

Proposal number 119

Proposal

Amend Article 9.18.3.5. as follows:

9.18.3.5. Ventilation to the Outside Not Required. Ventilation to the outside air is not required when the crawl space is used as a warm-air *plenum*, or heated by a forced-air heating system similar to a *basement* with supply and return air, or if the crawl space is vented to an adjacent *basement* with an opening conforming to Article 9.18.3.2.

Reason

It is more common now to have crawl spaces heated like a basement - with a forced air heating system, this would include supply and return air registers. The exception for not requiring ventilation of the crawl space to outside should apply to these installations as there would be sufficient insulation/transfer of the air from the crawl space.

---

261 Code Reference **9.18.3.6.** Related Proposals

Proposal number **179**

Proposal

Add Sentence as follows:

9.18.3.6. Mechanical Ventilation.

(1) If the crawlspace is to be ventilated mechanically

(a) it must be connected with at least one *supply* and one *return duct* from the forced air heating system, or

(b) be connected with at least one exhaust grill from a central house exhaust system, so 1/2 ACH can be achieved, or

(c) have an exhaust fan capable of 1/2 ACH. It must be controlled by a dehumidistat if the crawlspace has primarily perimeter insulation. If the crawlspace insulatation level is at the subfloor, a manual switch is acceptable.

Editorial Note:- This proposal , if adopted, will require further re-wording in code format..

Reason

(1) This system has an excellent track record.

(2) Systems of this quality are in most cases used frequently so would likely overcome any crawlspace problem.

(See document 1 page).

---

262 Code Reference **9.19.1.1.** Related Proposals

Proposal number **156**

Proposal

Amend Sentence 9.19.1.1.(1) as follows:

(1) Except as provided in Article 9.19.1.2. every roof space or attic above an insulated ceiling shall be ventilated with openings to the exterior to provide unobstructed vent area of not less than 1/300 of the insulated ceiling area with a minimum of 25% of the 1/300 at the top and a minimum of 25% of the 1/300 at the bottom.

Reason

To ensure proper air flow.

---

263 Code Reference **9.19.1.3.** Related Proposals

Proposal number **49**

Proposal

Add Sentence 9.19.1.3. (3) as follows:

(3) Minimum clearance for insulation (in Sentence (2)) may be reduced to 25 mm if an approved air vent channel is installed below the roof sheathing to provide a continuous, unobstructed air channel which is full width of the joist space.

Re-number Sentence 9.19.1.3.(3) to (4)

Editorial Note:- Wording between brackets added for clarity as proposal originaly referenced Article 9.19.1.4. in 1985 B.C.B.C.

Reason

To allow for maximum insulation to be installed in the joist space and to create an unobstructable air channel to remove moisture and heat. Air spaces as described in Section 9.19.1.3. can easily be blocked by insulation pushed up too far and should be reviewed.

Materials for such air vent channels must be of high water vapour permeance. These chutes are widely available.

---

264 Code Reference **9.21.1.3.** Related Proposals 40,42

Proposal number **41**

Proposal

Add Sentence 9.21.1.3.(3) as follows:

(3) *Flue pipes* shall extend through the metal thimble and terminate flush with the *chimney flue*.

Editorial Note:- Code now references CSA B365 for installation of flue pipes

Reason

My concern is in regards to where an exterior chimney is thickned or corbelled to allow a breaching through a combustible wall. Appeal Board Ruling No. 1080 dealt with this issue from a code viewpoint that the breaching up to the flue liner is to be treated as part of the flue pipe.

To the best of my knowledge this ruling has not been accepted by any building inspection department in the Province. It has been discussed during at least one BIABC zone meeting and at a BIABC executive meeting.

The standard practice is to use a galvanized thimble with 75 mm to 100 mm of unit masonry surrounding the thimble. Over time the galvanized thimble deteriorates along with the mortar of the surrounding unit masonry. As the thimbles used do not allow standard flue pipe to pass through, due to diameter size, this becomes an unsafe situation and has led to house fires in the past.

---

265 Code Reference **9.21.1.3.** Related Proposals 40,41 Proposal number 42

Proposal

Add Sentence to cover the following:

Change "metal thimble" to "stainless steel thimble" (and specify thickness).

Editorial Note:- Code now references CSA B365 for installation of flue pipes

Reason

My concern is in regards to where an exterior chimney is thickned or corbelled to allow a breaching through a combustible wall. Appeal Board Ruling No. 1080 dealt with this issue from a code viewpoint that the breaching up to the flue liner is to be treated as part of the flue pipe.

To the best of my knowledge this ruling has not been accepted by any building inspection department in the Province. It has been discussed during at least one BIABC zone meeting and at a BIABC executive meeting.

The standard practice is to use a galvanized thimble with 75 mm to 100 mm of unit masonry surrounding the thimble. Over time the galvanized thimble deteriorates along with the mortar of the surrounding unit masonry. As the thimbles used do not allow standard flue pipe to pass through, due to diameter size, this becomes an unsafe situation and has led to house fires in the past.

---

266 Code Reference **9.21.2.2.** Related Proposals Proposal number 31

Proposal

Delete Sentences 9.21.2.2.(2) and (3) and **Substitute** the following:

(2) Where two or more solid fuel burning *applicances* are connected to the same *chimney flue*, the *appliances* must be located on the same *storey*.

(3) *Appliances* burning other than solid-fuel shall not be connected to a *chimney flue* serving a solid-fuel burning *appliance*.

Reason

(A) To avoid confusion with codes for other than solid-fuel burning applicances.

(B) To prohibit connection of appliances which would be affected by creosote blocked flues.

---

267 Code Reference **9.21.2.2.** Related Proposals Proposal number 57

Proposal

Amend Sentence 9.21.2.2.(2) as follows:

(2) Where 2 or more fuel-burning *appliances* are connected to the same *chimney flue*, , the *appliances* must be located on the same *storey*.

Reason

There are many residences that have either a wood burning furnace or space heater in the basement with a woodburning space heater on the main floor. Using them in the same chimney flue, I have not heard of any problems with this type of installation.

---

268 Code Reference **9.21.2.4.(1).** Related Proposals Proposal number 157

Proposal

Amend Sentence 9.21.2.4.(1). as follows:

(1) Except for *chimneys* serving fireplaces, the size of a *chimney flue* shall conform to the requirements of the *appliance* installation standards referenced in sentence 6.2.1.4.(1) and Article 9.33.1.2 or if designed to function with greater slope than 45 degrees such as a russian fireplace.

Reason

The code does not acknowledge the possibility of using slopes greater than 45 degrees.

---

269 Code Reference **9.21.3.3.** Related Proposals Proposal number 30

Proposal

Delete Article 9.21.3.3. and **Substitute** the following:

9.21.3.3. Clay Liners. Clay liners shall conform to CSA A324, "Clay Flue Liners".

Delete reference in Table 2.7.3.A., page 20 to :- **ASTM 315-87 (1983)**

Add reference in Table 2.7.3.A., page 25 to:- CSA A324-M88 Clay Flue Liners.

Reason

To reference new Canadian standard for clay flue liners. This standard is much more comprehensive than the ASTM standard currently referenced in the code and is being used by Canadian flue pipe manufacturers to upgrade their products.

Standard includes test for heat resistance, so existing Sentence (2) is not required.

---

270 Code Reference **9.21.4.8.** Related Proposals 41,42 Proposal number **40**

Proposal

Add Sentence as follows:

9.21.4.8.(2) The portion of a *chimney* thickened to allow the breach to pass through a combustible wall shall have not less than 190 mm of masonry surrounding the breaching thimble or flue ring.

Editorial Note:- Code now references CSA B365 for installation of flue pipes

Reason

My concern is in regards to where an exterior chimney is thickened or corbelled to allow a breaching through a combustible wall. Appeal Board Ruling No. 1080 dealt with this issue from a code viewpoint that the breaching up to the flue liner is to be treated as part of the flue pipe.

To the best of my knowledge this ruling has not been accepted by any building inspection department in the Province. It has been discussed during at least one BIABC zone meeting and at a BIABC executive meeting.

The standard practice is to use a galvanized thimble with 75 mm to 100 mm of unit masonry surrounding the thimble. Over time the galvanized thimble deteriorates along with the mortar of the surrounding unit masonry. As the thimbles used do not allow standard flue pipe to pass through, due to diameter size, this becomes an unsafe situation and has led to house fires in the past.

---

271 Code Reference **9.21.5.1.(3)** Related Proposals 26 Proposal number **27**

Proposal

Delete Sentence 9.21.5.1.(3) and **substitute** the following:

(3) The edges of *combustible* flooring, sheathing, siding and panel wall finishes, except gypsum board finish, shall have not less than 12 mm clearance from masonry or concrete chimneys.

(4) The clearance between masonry or concrete chimneys and the face of *combustible* sheathing, siding and panel wall finishes shall be not less than the clearances for framing in Sentence (1).

Reason

To clarify clearances for situations not covered by the code which have been established as safe by many years of field application. Clearances similar to those adopted by CSA A-405 Committee on masonry fireplaces and chimneys.

---

272 Code Reference **9.22.9.3.** Related Proposals 27 Proposal number **26**

Proposal

Delete the heading and subsitute the following:

9.22.9.3. Clearances from Combustible Materials.

Add Sentences 9.22.9.3.(3) & (4) as follows:

(3) The edges of *combustible* flooring, sheathing, siding and panel wall finishes, except gypsum board finish, shall have not less than 12 mm clearance from fireplace or smoke chamber masonry.

(4) The clearance between fireplace or smoke chamber masonry and the face of *combustible* sheathing, siding and panel wall finishes shall be not less than the clearances for framing in Sentences (1) & (2).

Reason

To clarify clearances for situations not covered by the code which have been established as safe by many years of field experience. Clearances similar to those adopted by CSA A-405 Committee.

---

273 Code Reference **9.22.10.1.** Related Proposals Proposal number **307**

Proposal

Delete Article and **substitute** as follows:

9.22.10.1. Specification Fireplace Inserts shall conform to ULC S628, "Standard for Fireplace Inserts."
9.22.10.2. Installation of Fireplace Inserts Fireplace Inserts shall be installed in conformance to the requirements of CAN/CSA-B365 "Installation Code for Solid Fuel Burning Appliances and Equipment".

Reason

Presently reads: 9.22.10.1. Fireplace Inserts and their Installation shall conform to ULC S 628 "Standards for Fireplace Inserts."
ULC S 628 is not an installation standard. CSA B 365 is the installation standard reference in the N.B.C. at 9.22.10.
(See documents #307-A thru C).

---

274 Code Reference **9.23.3.2.** Related Proposals Proposal number **158**

Proposal

Amend Article as follows:

9.23.3.2. Length of Nails. All nails shall be long enough so that not less than half their required length penetrates into the second member.

Reason

"Required" is necessary to justify and complete the wording.

---

275 Code Reference **9.23.3.4.** Related Proposals Proposal number 159

Proposal

Amend the eighth row column 1 in Table 9.23.3.A. as follows:

tail joists to adjacent header joist (end nailed) around openings. each header joist to adjacent trimmer joist (end nailed) around openings.

Reason

We feel that the change reflects the actual intent of the code.

---

276 Code Reference **9.23.4.1.** Related Proposals Proposal number 47

Proposal

Add Sentence 9.23.4.1.(3) as follows:

(3) Spans as shown in 'The Span Book' - Span Tables for Canadian Dimension Lumber and Glued-Laminated Timber, 1990' are acceptable.

Reason

This excellent book will provide designers with an invaluable guide in designing better floors and other structural systems based upon the latest research.

It has the approval of the NRC.

---

277 Code Reference **9.23.7.2.** Related Proposals Proposal number 160

Proposal

Amend Article as follows:

9.23.7.2. Levelling of Sill Plates. Sill plates shall be leveled by setting them on a full bed of mortar, except that where the top of the *foundation* is level, they may be laid directly on the *foundation* provided the junction between the foundation and the sill plate is **caulked or the sill plate is** placed on a layer of mineral wool not less than 25 mm thick before being compressed. (See also 9.23.2.3).

Reason

Sealing could cause damage in draft free homes when the interior is airtight. So we recommend the word "caulking" be omitted.

---

278 Code Reference **9.23.9.7.** Related Proposals Proposal number 162

Proposal

Amend Article as follows:

9.23.9.7. Support of Tail and Header Joists. When tail joists and header joists are supported by the floor framing, they shall be supported by suitable joist hangers or nailing in accordance to table 9.23.3.A.

Reason

Suggest the underlined be added for clarification.

---

279 Code Reference **9.23.9.8.(1)** Related Proposals Proposal number 163

Proposal

Amend Sentence 9.23.9.8.(1) as follows:

(1) Non-*loadbearing* walls parallel to the floor joists shall be supported by joists beneath the wall or on blocking between the joists and doubled in a wall with kitchen cabinets fastened to.

Reason

Cabinets attached in fact cause the wall to become load bearing.

---

280 Code Reference **9.23.9.8.(4)** Related Proposals Proposal number 164

Proposal

Delete Sentence 9.23.9.8.(4) and **substitute** equivalent in Part 4 as follows:

(4) *Loadbearing* interior walls parallel to floor joists shall be supported by beams or walls of sufficient strength to transfer safely the design loads to the vertical supports.

Editorial Note:- A suitable reference would still be required in Part 9 to refer users to Part 4.

Reason

Clause should be included under part 4 as an engineer is required to calculate it.

---

281 Code Reference **9.23.9.8.(5)** Related Proposals Proposal number 165

Proposal

Amend Sentence 9.23.9.8.(5) as follows:

(5) *Loadbearing* interior walls at right angles to floor joists shall be located not more than 900 mm from the joist support when the wall does not support a floor, and not more than 600 mm from the floor joists when the wall supports one or more floors **_, unless the joist size is designed to support such loads.**

Reason

End sentence after floors.

---

282 Code Reference **9.23.10.6.** Related Proposals **Proposal number 166**

Proposal

Amend Article 9.23.10.6. and Table 9.23.10.A in accordance with the following:

Both this clause and Table 9.23.10.A. changed so that if within allowable spacings there is no requirement for a header and also changes that would permit the use of headers in the floor systems and eliminate separate headers for windows etc.

Reason

See above.

---

283 Code Reference **9.23.11.3.(4).** Related Proposals **Proposal number 167**

Proposal

Amend Sentence 9.23.11.3.(4). as follows:

(4) The top plates may be omitted in a section of *loadbearing* wall containing a lintel provided the lintel is tied to the adjacent wall section with not less than 75 mm by 150 mm by 0.91 mm thick galvanized steel, or 19 mm by 89 mm by 300 mm wood splice nailed to each wall section with no fewer than three 63 mm nails or when trimmer joist is continuous over the opening.

Reason

Add "or when trimmer joist is continuous over the opening" as we feel it is similar in effect.

---

284 Code Reference **9.23.12.2.(1)** Related Proposals **Proposal number 168**

Proposal

Amend Sentence 9.23.12.2.(1) as follows:

(1) Openings in *loadbearing walls* shall be framed with lintels designed to carry the superimposed loads to adjacent studs in accordance with table 9.23.12.A.

Reason

"In accordance with table 9.23.12.A." should be added as a reference.

---

285 Code Reference **9.23.13.2.** Related Proposals **Proposal number 170**

Proposal

Amend Article as follows:

9.23.13.2. Framing around Openings. Roof and ceiling framing members shall be doubled on each side of openings greater than 2 required rafter or joist spacings wide.

Reason

"Required" is needed to improve the sentence.

---

286 Code Reference **9.23.13.11.** Related Proposals **Proposal number 171**

Proposal

Delete the following:

Article 9.23.13.11. Wood Roof Trusses

Reason

Question: Do we even require this section as an engineer is required?

---

287 Code Reference **9.23.13.11.** Related Proposals **Proposal number 18**

Proposal

Add Sentence 9.23.13.11.(10) as follows:

(10) The toothed metal truss plates be secured with nails or screws to reinforce the holding power of the teeth.

Reason

These metal truss plates lose hold rapidly under fire conditions which result in truss failure and sudden building collapse which compromises the safety of attending fire suppression personnel. The Illinois Fire Service Institute, conducted tests to help determine the structural stability of this problem. The findings were that the gusset plates failed to maintain the integrity of the truss because as they heated up, the truss started sagging. The gusset plates started pulling out from the top chord, and then the load on the truss compressed the top and bottom chords.

The results of this action causes the roofs that firefighters are working on to collapse without warning.

---

288 Code Reference **9.23.14.2.** Related Proposals **Proposal number 147**

Proposal

Add Sentence as follows:

(5) Particle board or composite subflooring may be used only where a building is constructed in a factory so that the subfloor will not be exposed to weather. Such subflooring shall conform to Grade N-1 or N-2 in CAN 3-0188.1, "Interior Mat-Formed Wood Particle Board". Such subflooring shall have its upper surface and all edges treated to restrict water absorption.

Editorial Note:- This proposal , if adopted, will require re-wording and possible editing of related Sentence

Reason

(See document 2 pages.)

---

289 Code Reference **9.23.15.6.** Related Proposals

Proposal number **90**

Proposal

Amend Sentence 9.23.15.6.(2) as follows:

(2) The thickness or rating of roof sheathing on a roof not used as a walking deck shall conform to either Table 9.23.15.A. or 9.23.15.B. except that 11.0 mm thick Grade 0-2 Waterboard and Strandboard may be used on 600 mm spans without edge support.

Reason

See document (1 Page)

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290 Code Reference **9.23.16.5.** Related Proposals 72

Proposal number **73**

Proposal

Delete Article 9.23.16.5. and **substitute** the following:

9.23.16.5. Joints in Panel-Type Sheathing

(1) Panel-Type Sheathing shall be applied horizontally with vertical joints staggered.
(2) A vertical joint gap not less than 2 mm and a horizontal joint gap of not less than 12 mm shall be left between sheets of plywood, waferboard, strandboard or fibreboard.
(3) Provisions shall be made in sheathing under windows to allow for wall cavity breathing.

Editorial Note:- The proposed wording has been modified to reflect the 1990 change in layout and wording, proponent used 1985 B.C.B.C. but point still valid.

Reason

A horizontally applied sheet of plywood or waferboard can create a second vapour barrier in the wrong location. As most builders no longer use shiplap or board sheathing, wall breathing is becoming a problem.

---

291 Code Reference **9.23.16.5.(2)** Related Proposals 73

Proposal number **72**

Proposal

Amend Sentence 9.23.16.5.(2) as follows:

(2) A gap of not less than **2 mm** 10 mm shall be left between sheets of plywood, waferboard, strandboard, or fibreboard.

Reason

To allow breathing of all stud wall cavities in exterior walls of dwelling units. (see document) (1 page).

---

292 Code Reference **9.24.5.** Related Proposals

Proposal number **169**

Proposal

Amend in accordance with the following:

Suggestion: That a new article be installed to cover single 38 mm headers as allowed in table 9.24.5.B of B.C. building code for single floor or single roof loads.

Reason

None given.

---

293 Code Reference **9.25** Related Proposals 231 to 234

Proposal number **234**

Proposal

Section 9.25. Thermal Insulation and Control of Condensation

See Appendix for details of this proposal

Editorial Note:- Software limitations and extent of proposal do not permit inclusion within main body of document.

Reason

The objective of this submission is to amend the British Columbia Building Code in order to establish minimum energy efficiency standards for buildings in the province. The submission reviews the issue of energy standards for buildings by examining the importance of the standards to the province, discussing the specific standards being proposed, the cost-effectiveness of the standards and the probable energy savings to the province from introducing the standards.

(See document 20 Pages).

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294 Code Reference **9.25.1.1.** Related Proposals

Proposal number **67**

Proposal

Add Sentence 9.25.1.1.(3) as follows:

(3) The appropriate requirements of Part 5 for control of condensation shall apply to buildings not covered by this Section.

Reason

Part 9 only has requirements for insulation and vapour barrier for Group C buildings (9.25.1.1.(1); there are no requirements, at present, in the Code for Part 9, Group C, D, E, or F2 buildings for insulation or vapour barrier. There will be other proposals to cover insulation. This proposal is to cover vapour barrier requirments for these buildings.

Editorial Note:- Some proposals for insulation also cover air and vapour control.

---

296 Code Reference **9.25.1.1.** Related Proposals 149. Proposal number 148

Proposal

Add Sentence as follows:

9.25.1.1.(3) (See various tables provided regarding the provision of minimum insulation values for Part 9 buildings in different areas of the Province.)

Editorial Note:- This proposal, if adopted, will require wording in code format, information provided is too extensive to reproduce in this document. It is available for examination and will be presented to the CAC.

Reason

To ensure a minimum R value of insulation to be required on all buildings as defined in B.C. Building Code Part 9.
B.C. is the only major province not currently enforcing minimum R value requirements.
With proven energy conservation measures being enforced, a substantial savings of natural resources is achieved.
Reduced pollution levels reduce the Greenhouse effect and global warming.
(See document #148-A thru L.)

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296 Code Reference **9.25.2.1** Related Proposals Proposal number 51

Proposal

Delete Article 9.25.2.1. and **Substitute** the following:

9.25.2.1. Required Insulation. *Buildings of residential occupancy* shall be provided with thermal insulation of a minimum RSI value as follows: exterior walls RSI 2.1; exterior ceilings RSI 4.9; floors over crawl spaces RSI 4.9; basement walls to 300 mm below *grade* RSI 2.1; under slabs-on-grade RSI 1.0; external doors RSI 1.0. These minimum standards should be exceeded in areas of heating degree days over 4000 d-d or where the owner wishes to reduce heating costs.

Reason

No minimum insulation standard now exists. For obvious economic and social reasons it is essential that the code specify a minimum standard. The NBC and many other provinces have such standards. It would be useful to adopt a graph type chart similar to that on page 69 of "The Canadian Green Consumer Guide" or the R-2000 guidelines. Presumably, B.C. Hydro and the B.C. Government would be in favour of establishing such standards in light of the "Powersmart" program.

---

297 Code Reference **9.25.4.3.(4)** Related Proposals Proposal number 172

Proposal

Amend Sentence 9.25.4.3.(4) as follows:

(4) Where soffit venting is used, measures shall be taken to prevent loose-fill insulation from causing blockage of soffit vents with an approved airstop designed to prevent air movement through the insulation.

Reason

Clarification.

---

298 Code Reference **9.25.4.7** Related Proposals Proposal number 55

Proposal

Delete Article 9.25.4.7. and **Substitute** the following:

9.25.4.7. Mechanical Damage. Insulation shall be protected from damage by a suitable covering such as gypsum board, plywood, particleboard, waterboard or hardboard to a minimum height of 1 m above floor and walkways or where mechanical damage may occur.

Reason

a) To clearly indicate protection requirements for areas such as unfinished garages, basements and stairways where insulation is installed.
b) Overall wall protection, required by some jurisdictions is not necessary and creates problems where other Codes would then also require completion of installations such as electrical wall outlets.
c) To prevent vapour barrier requirements of Subsection 9.25.6. being damaged by common household tasks such as sweeping of floors, children playing, etc.

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299 Code Reference **9.25.5.4** Related Proposals Proposal number 59

Proposal

Amend Article as follows:

9.25.5.4. Penetration of Air Barrier Protection. Penetrations of the air barrier protection, such as those cut for the installation of electrical wiring, electrical boxes, piping or ductwork, shall be sealed to maintain the integrity of the air barrier protection over the entire surface. (All electrical boxes shall be installed within approved poly pans. The locations where electrical wires pass through the poly pans shall be caulked with an approved sealant. The air barrier is to be caulked to the poly pan with an approved sealant. This shall be done to provide an air tight barrier).

Editorial Note:- The proposed wording has been modified to reflect the 1990 change in emphasis from vapour barriers to air barriers, proponent used 1985 B.C.B.C. but point still valid.

Reason

We have Building Code guidelines governing the installation of vapour (air) barriers so we can achieve an airtight seal at wall and ceiling intersections. We also have Code directives as to the proper way to lap and seal the joints in the poly air barrier. This is all very good, BUT, unless the electrical boxes are installed in poly pans and the wires caulked where they pass through the poly pans, all the existing Code guidelines are in vain and all we end up with is a well sealed air barrier that leaks like a sieve at every electrical outlet. Without the installation of the poly pans there is no sure way to get a quick efficient seal around the electrical outlets.

---

300 Code Reference 9.26.2.1.(2) Related Proposals Proposal number 107

Proposal

Add Sentence 9.26.2.1.(2) as follows:

(2) Except where otherwise permitted by the authority having jurisdiction, cedar shakes and shingles shall be graded by an agency accredited by the Standards Council of Canada. (See Appendix A.)

Add the following at the end of Sentence 9.27.7.1.(1):

(See A-9.26.2.1.(2) in Appendix A).

Appendix

Add Sentence A-9.26.2.1.(2) as follows:

A-9.26.2.1.(2) CSA Standard O118.1, "Western Red Cedar Shingles and Shakes," only requires each bundle of shingles or shakes to be distinctly marked to identify the size, grade of product, the name of the manufacturer or their agent, and a statement that the product meets the requirement of the Standard. This Sentence states that the authority having jurisdiction requires grading of shakes and shingles by an agency accredited to do such work by the Standards Council of Canada except that the the authority may waive this requirement where it has been shown to be unnecessary. Installers should check with local requirements prior to obtaining shakes or shingles.

Reason

This proposal would require grading of shakes and shingles by a certified independent agency unless the local authority waives this requirement wherein is satisfied that it is not necessary.

---

301 Code Reference 9.26.4.1. Related Proposals Proposal number 355

Proposal

Delete Article 9.26.4.1. and substitute:

9.26.4.1. Materials. Sheet metal flashing shall consist of not less than 1.73 mm thick sheet lead generally and 1.19 mm thick sheet lead for manufactured vent flashing, 0.33 mm thick galvanized steel, 0.46 mm thick copper, 0.46 mm thick zinc or 0.48 mm thick aluminum. Flashing for vent pipes may also be fabricated from polychloroprene (neoprene) at least 2.89 mm thick.

Add Article as follows :

9.26.4.6. Flashings for Vent Pipes. Flashings for vent pipes shall be designed to conform to the pitch of the roof, prevent the entry of water to the roof space, and allow for thermal movement of the vent pipe. Flashings shall extend not less than 100 mm horizontally in all directions, with a minimum overall size of 300 mm, and a height of 150 mm unless otherwise accepted.

Reason

The flashing requirements for vent pipes were transferred from the Plumbing Code to the Building Code in the 1985 B.C. Building Code. The reason for this change is still valid — all flashing requirements dealing with roofing should be contained in one location for convenience and consistency, in the Building Code.

---

302 Code Reference 9.26.10 Related Proposals Proposal number 175

Proposal

Delete Article 9.27.9.2 (B.C.B.C. Second Rev.):

Reason

Taper-sawn shakes should not be laid as shingles. With the limited flat grain allowance, it is possible that splits could occur over keyways resulting in leaks. Taper-Sawn shakes were developed and have been used successfully for over a decade with interlayment felts required. Please refer to Grading Rules #175-A and application recommendations for Taper-Sawn shakes.

(See document 2 pages)

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303 Code Reference 9.26.10. Related Proposals Proposal number 176

Proposal

Amend heading as follows:

9.26.10 **Western Red Cedar Handsplit/Resawn and Taper-sawn Roof Shakes.**

Reason

To provide definitive language for the main different types of red cedar roof shakes. Please see accompanying proposal (#177)

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304 Code Reference **9.26.10.1.** Related Proposals **Proposal number 177**

Proposal

Amend Article as follows:

9.26.10.1 Handsplit/resawn and taper-sawn shakes shall be **100 percent edge grain and** not less than 450 mm long and not less than 100 mm nor more than 350 mm wide.(**See Appendix)**
Premium grade handsplit/resawn and taper-sawn shakes shall be 100 percent edge grain.
No. 1 grade handsplit/resawn shakes shall permit not to exceed 20 percent flat grain.
No. 1 grade taper-sawn shakes shall permit not to exceed 10 percent flat grain.
No. 2 grade taper-sawn shakes shall permit 100 percent flat grain.

Editorial Note:- This proposal , if adopted, will require further re-wording in code format..

Reason

Cost effective roofs of other than Premium grade shakes are entirely possible and will provide a long service life. All shake installations require interlayment felts which provide weather tightness. In the interest of affordable housing and maximum utility of natural resources, consumers should be permitted a choice of roofing materials. The above shake grades have been permitted in the United States for many years and have given satisfactory performance.
(See copy of our grading rules and application recommendations for taper-sawn shakes.)

---

305 Code Reference **9.26.10.3.** Related Proposals **Proposal number 144**

Proposal

Delete Article 9.26.10.3. and **substitute** the following:

9.26.10.3. Spacing and Joints. Joints in any one course of shakes shall be separated not less than 40 mm from joints in adjacent courses, and in any three courses no two joints shall be in direct alignment.

Reason

There have been two appeals directed to this Article and both appeals served to confuse the intent and benefit of this requirement. In addition, correspondence from the Director of Building Standards (File # JR-89-100) was unable to lend an explanation to the particular intent of this Article. The BIABC and most of the related industry participants conclude and believe staggered joints are required in alternate (every third) course. Therefore a more precise article is warranted which will generate a clear understanding of the requirement and its intent, which is to ensure the complete integrity of the 2 ply roof system. The suggested wording is an adjunct from the Shingle and Shake application requirements contained in Section 7.2.2. and 7.2.3. of the Roofing Contractors Association of B.C. Roof Practices Manual.

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306 Code Reference **9.26.10.3.** Related Proposals **Proposal number 193**

Proposal

Delete Article and **substitute** as follows:

9.26.10.3. Spacing and Joints. Joints in any one course of shakes shall be separated not less than 40 mm from joints in adjacent courses, and in any three courses no two joints shall be in direct alignment.

Reason

There have been two appeals directed to this Article and both appeals served to confuse the intent and benefit of this requirement. In addition, correspondence from the Director of the Building Standards Branch (File No. JR-89-100) was unable to lend an explanation to the particular intent of this article. THe Building Inspector's Association and most of the related industry participants conclude and believe staggered joints are required in alternate (every third) course.

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307 Code Reference **9.26.10.5.** Related Proposals **Proposal number 178**

Proposal

Amend Article as follows:

9.26.10.5 Exposure. The exposure of Premium grade and No. 1 grade handsplit/resawn and taper-sawn wood shakes shall not exceed 190 mm for shakes at least 450 mm long and 250 mm for shakes at least 600 mm long.
The exposure of No. 2 grade taper-sawn shakes shall not exceed 140 mm for shakes at least 450 mm long and 190 mm for shakes at least 600 mm long.

Reason

This proposal provides definitive requirements for maximum exposures of red cedar roof shakes based on lengths and grades. A No. 2 grade taper-sawn shake installation will result in 3 piles of wood and 3 piles of interlayment felts resulting in a 6 ply roof. Many applications of No. 2 grade taper-sawn roofs in Canada and the U.S. have proven the cost effectiveness and satisfactory performance of this roof system.
(See copy of our grading rules and application recommendations for taper-sawn shakes.)

---

308 Code Reference **9.26.17.2.** Related Proposals **Proposal number 173**

Proposal

Amend Article 9.26.17.2. as follows:

This clause should state what the requirement actually is and not have to refer to part 7.

Reason

This clause should state what the requirement actually is and not have to refer to part 7.

---

309 Code Reference **9.27.7.1.** Related Proposals

Proposal number 19

Proposal

Add Sentence 9.27.7.1.(3) as follows:

(3) All cedar shake roofs shall be impregnated with a fire retardant substance.

Reason

Combustible wood shakes or shingles are not only a danger to the rest of their own structure, but they also easily peel off when ignited and are carried as fire brands to other roofs.

During a wildland conflagration, a cedar shake roof is especially dangerous because it can catch and hold fire brands carried on the wind from a distant flame front.

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310 Code Reference **9.31.4.1.** Related Proposals 174

Proposal number 104

Proposal

Amend Article as follows:

9.31.4.1. Required Fixtures. A kitchen sink, lavatory, bathtub or shower, and water closet shall be provided.....

Reason

The purpose of bathrooms is for public health and cleanliness. The type of cleaning fixture should be the preference of the owner. In some circumstances eg. the disabled or elderly might prefer a custom shower unit instead of a bathtub.

---

311 Code Reference **9.31.4.1.** Related Proposals 104

Proposal number 174

Proposal

Amend Article as follows:

9.31.4.1. Required Fixtures. A kitchen sink, lavatory, bathtub, or shower and water closet shall be provided for every *dwelling unit* where a piped water supply is available.

Reason

Add "or shower" as we believe purchasers should have a choice of either one or the other.

---

312 Code Reference **9.32.3.** Related Proposals

Proposal number 76

Proposal

Add Article as follows:

9.32.3.?. Make-up air requirements in Article 9.33.4.4. (B.C.B.C.) do not apply to *dwelling units* exceeding 300 m2 with all spillage susceptible *chimneys* on the inside.

Reason

See document (1 Page).

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313 Code Reference **9.32.3.** Related Proposals

Proposal number 151

Proposal

Add Article 9.33.3.?. (B.C.B.C.) as follows:

9.33.3.?. In *dwelling units* where the mechanical ventilation system is not of the distributed type detailed in 9.33.3.2., it shall be designed such that a portion of the ventilation required under 9.33.3.5. shall directly or indirectly cause the bedrooms to be ventilated. The amount of this bedroom ventilation should at a minimum be proportional to the volume of the dwelling unit. The opening of windows is not acceptable as a means of indirect mechanical ventilation.

Editorial Note:- This proposal , if adopted, will require re-wording in code format, insert Section between 9.33.3.5. and 9.33.3.6.(these are from BCBC 85)

Reason

(See document #151-A thru E.)

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314 Code Reference **9.32.3.5.** Related Proposals

Proposal number 81

Proposal

Amend Table 9.33.3.B. forming part of Article 9.33.3.5. (B.C.B.C.) as follows:

Last row should read :

Column 1 - **975 and over** over 732

Column 2 - **400 and over** over 300

Reason

Editorial

---

315 Code Reference **9.32.3.5.** Related Proposals — Proposal number 82

Proposal

Amend Articles 9.33.3.5. & 9.33.3.14.(B.C.B.C.) as follows:

Remove the requirements for automatic (dehumidistat) control of the ventilation system for homes with naturally - aspirating forced air heating system located in climates colder than -10 degrees C.

Editorial Note:- The proponent has not supplied wording for this modification.

Reason

Experience indicates that these homes become excessively dry during the heating season, not damp, which was the original concern resulting in this requirement. The dehumidistat and associated furnace control add unnecessary cost to the homeowner and serve no purpose in a cold climate zone.

316 Code Reference **9.32.3.13.** Related Proposals — Proposal number 80

Proposal

Amend Article 9.33.3.13. (BCBC). as follows :

9.33.3.13. Except as described in Article 9.33.3.8., additional separate make-up air for the **entire capacity** actual installed appliance exhaust rate shall be provided for other exhaust *appliances* installed in the *dwelling unit* with a rated exhaust capacity.....

Reason

We would like to see this Article clarified to show that the fan forced make-up air required need only compensate for the actual appliance exhaust (cfm at .2" SP) rate - not the free air rating.

Currently many make-up air systems are installed which grossly over compensate the actual need (as they are designed to meet "claimed" need), or are installed where not required at all.

317 Code Reference **9.32.3.14.** Related Proposals — Proposal number 78

Proposal

Add Appendix Note as follows :

A-9.33.3.14.(BCBC)

Table 9.33.3B column 3 or 4 requirements shall be assumed to be met if the furnace fan runs continuously or starts automatically. "Furnace fan speed selection is not important".

Reason

This clarification is required to allow an installer of a wall installed forced air heating system to use their lowest speed for heating and the same lowest speed used for ventilation. Today's multi-speed direct drive furnaces are designed for heating use on the lower speeds and air conditioning use on the higher speeds.

This use of a single speed for both heating use and ventilation use reflects good practice and serves the homeowner's best interests of low fan electrical consumption and quiet operation on both heating and ventilation.

318 Code Reference **9.32.3.21.** Related Proposals — Proposal number 77

Proposal

Delete Article 9.33.3.21(BCBC) and **substitute** the following:

9.32.3.21. *Exhaust ducts servicing updraft or downdraft kitchen ranges shall conform to the requirements of Part 6 for supply ducts.*

Reason

9.33.3.21.(B.C.B.C.)

Residential ventilation systems exhaust or supply air to a residence at similar temperatures and conditions to the return air system of a forced air heating system. Part 6 requires Class 1 or non-combustible duct for the supply (hot air) side of residential forced air systems, but these requirements do not apply to the return air side of this same system. These requirements for Class 1 or non-combustible duct should not apply to ventilation duct systems either. Because ventilation is now considered an important issue, especially in those houses which are not hot water or electric baseboard heated, which require extensive ducting, this change to allow combustible ducting would make fully distributed systems more economical. This would give formal acceptance to the ten year proven safe practice of using interior wall cavities for the distrbution of both supply air to, and collection of exhaust air from, high wall level grill locations.

319 Code Reference **9.32.4.3** Related Proposals — Proposal number 79

Proposal

Add to end of Article 9.33.4.3.(BCBC) the following:

Fans selected to meet requirement 9.33.4.1. must be AMCA rated for air flow at 50 Pa.

Reason

Some fan manufacturers currently submit their products for testing but some do not. All should be competing fairly.

If this is not done, we must therefore continue to accept non-certified performance ratings ("paper cfm" ratings). Current articles prescribe installation ducting size, an important requirement which clearly outlines the installer's responsibility. These same articles however, (with no reference to AMCA standard), do nothing to ensure that the fan manufacturers have done their job.

The majority of fans used in B.C. residences are not AMCA listed and recent testing by HRAI-B.C. indicates that these "code" fans do not meet advertised airflow ratings.

As things sit now, the homeowner may end up with a "system" with 30% less real performance air flow than the current prescriptive reqirements mandate.

320 Code Reference **9.33.1.2.** Related Proposals Proposal number 74

Proposal

Add Sentence 9.33.1.2.(2) as follows:

(2) Solid Fuel Burning appliances and equipment shall conform to one of the following standards, whichever is applicable:

a) CSA Standard CAN/CSA-B366.1,
b) CSA/ULC Standard B366.2/S627-M,
c) ULC Standard S610, or
d) ULC Standard S628

Reason

The present Code covers only the "installation" of solid fuel burning appliances. This additional clause should make it simpler for the inspector in the field to identify approved units.

If required, an inspector could still approve a non-certified appliance by using Section 2.5 of the Code. (equivalents).

---

321 Code Reference **9.34.** Related Proposals 258 to 274 Proposal number 274

Proposal

Delete Articles as follows:

Articles:- 9.34.1.3, 9.34.1.4, 9.34.2.1, 9.34.2.2, 9.34.2.3, 9.34.2.4, 9.34.2.5, & 9.34.2.6.

Reason

Already covered by Electrical Code or will be expanded to do so. The electrical trades doing this work should be able to simply comply with the B.C. Electrical Code for electrical work.

---

322 Code Reference **10.0.0.0.** Related Proposals Proposal number 66

Proposal

Add the following new Part 10.:

Part 10 Alternate compliance Methods for Heritage Buildings. (See appended 11 page document)

Reason

There has been considerable interest shown in the last couple of years in providing more suitable building regulations in dealing with Heritage Buildings. This is partly due to initative arising from the proposed new Provincial Heritage Act concerning the preservation and rehabilitation of Heritage sites and Buildings.

It is generally recognized that the present Building Code was primarily written for new construction and provides for a performance level that is significantly higher than what exists with older buildings. To apply present Building Code requirements to existing buildings, in many cases, is impractical and with Heritage Buildings may compromise historic appearances or authenticity of displays.

Therefore, this proposal has been developed to provide for alternate methods in complying with the performance level intent by the Building Code, but in methods that are more suitable for Heritage Buildings. The use of sprinklers have been advocated as one of the primary methods in assuring the performance level for Heritage Buildings. Sprinkler systems not only assist by controlling the fire for evacuation purposes, but also provides the added benefit of protecting the building from possible destruction due to fire.

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323 Code Reference **A-3** Related Proposals 6 , 13, 20,44 Proposal number 1

Proposal

Add Sentence as follows to the end of A-3. **Fire Fighting Assumptions**:

For the purposes of calculating the water supply requirements for firefighting, the Fire Underwriters survey guide titled "Water Supply for Public Fire Protection" or NFPA 1231 (whichever is most applicable) may be used.

Reason

Provides more specific guidance to code users.

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324 Code Reference **A-9.10.3.B** Related Proposals Proposal number 84

Proposal

Amend Table A-9.10.3.B. as follows:

Revise Assemblies No. 4, 8, and 12 for resilient channels spaced at 200 mm o.c. to resilient channels spaced at 400 mm o.c.

Reason

Assemblies No. 4, 8, & 12 - resilient channels are spaced at 200 mm, whereas industry standards suggest 400 mm or 600 mm. Data from U.S. Gypsum Company (copy attached #84-A) shows that their RC-1 channel will support two layers of 15.9 mm gypsum board when installed 600 mm o.c. We recommend that the spacing be amended to 400 mm.

(See documents-4 pages)

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325 Code Reference **A-9.10.3.B** Related Proposals

Proposal number 83

Proposal

Amend Table A-9.10.3.B. as follows:

Assemblies No. 6 & 7 to include resilient channel at 400 o.c.

Reason

Assembly No. 6 & 7 shows ratings of STC 52. Data from one manufacturer (copy attached) suggest that these ratings are only achievable with resilient channel.

Our experience has been that assemblies with 19 mm gypsum-concrete topping can provide considerably poorer STC ratings in the field than would be suggested by laboratory data. Further, the inclusion of batt insulation in the assembly would reduce the discrepancy between laboratory and field tests. We therefore urge you to amend assemblies 6 & 7 to include resilient channel at 400 o.c. as a minimum, and preferably, to include a layer of batt insulation.

See document (1 page)

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326 Code Reference **A-9.10.3.A.** Related Proposals

Proposal number 332

Proposal

Amend Table A.9.10.3.A as follows:

Assembly Type 30 (page 378.)

Delete Description and **substitute** as follows:

38 mm x 89mm or 38 mm x 140 mm studs spaced up to 600 mm o.c. mineral fibre conforming to CSA A101, "Thermal Insulation, Mineral Fibre, for Buildings" and with a mass of at least 1.22 kg/m2, wall sheathing and siding

Reason

(1) The proposed wording is a direct quotation from Table 2.3.F of Chapter 2 of the supplement to the (1985) NBC.

(2) To specify the same standard for table 9.10.3.A assemblies as specified in Table 2.3.F of the supplement.

(3) To lessen the likelyhood of fibreglass insulation being substituted, which breaks cown under heat before the required fire-resistance period is achieved.

---

327 Code Reference **A-9.10.3.A.** Related Proposals

Proposal number 331

Proposal

Amend Table A.9.10.3.A as follows:

Assembly Types 33 and 34. (page 378.)

Amend footnote (4) to read footnote (5).

Reason

(1) Assemblies 33 and 34 don't appear to be up to the standard specified in assembly 31 for the same 1 hr fire-resistance rating for wood studs.

To achieve a 1 hr rating in assembly 31, the insulation must not only have a mass of at least 1.22 kg/m2 but must also be mineral fibre, whereas to achieve the same fire-resistance rating with steel studs, and with the same C and D wall finishes, the footnote (4) references in assemblies 33 and 34 would permit fibreglass, and without any specified minimum density.

(2) Fibreglass could break down under heat before the fire-resistance period is achieved.

(3) Note that assembly 30 requires a minimum mass for fire-resistance alone (sound=N/A)

(4) Note that Table 2.3.F of the supplement, for extra time assigned for insulation, applies only to wood studs. Steel studs aren't included.

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328 Code Reference **A-9.10.3.A.** Related Proposals

Proposal number 333

Proposal

Amend Table A.9.10.3.A as follows:

Footnotes (page 378.)

Delete footnote (5) and **substitute** as follows:

(5) Absorbtive material required to achieve fire-resistance rating and STC rating shall be preformed insulation of rock or slag fibres conforming to CSA A101, "Thermal Insulation, Mineral Fibre, for Buildings" and with a mass of not less than 1.22 kg/m2 of wall surface.

Reason

(1) The proposed wording is a direct quotation from Table 2.3.F. of Chapter 2 of the Supplement to the (1985) NBC.

This is virtually the equivalent of those assemblies in Table 9.10.3.A. relying on the insulation component to contribute to the fire-resistance rating.

(2) To specify the same CSA standard for Table 9.10.3.A assemblies as specified in Table 2.3.F. of the supplement.

(3) To lessen the likelyhood of fibreglass insulation being substituted, which breaks down under heat before the required fire-resistance period is achieved.

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329 Code Reference **A-9.16.2.1.** Related Proposals 112, 114

Proposal number 115

Proposal

Renumber Appendix note A-9.16.2.1. to A-9.13.6.2.(2)

Reason

We have proposed changes to incorporate the requirement of Article 9.16.2.1. into Sentence 9.13.6.2.(2) and to delete Article 9.16.2.1. Therefore, the appendix note to Article 9.16.2.1., which will then apply to Sentence 9.13.6.2.(2), should be renumbered appropriately.

1990 Building Code Change Process

Appendix To Change Proposals

Proposal # 98

Add as follows:

Fig. 5.2
Seismic Upgrading Requirements

Seimic Upgrading

The following table outlines the degree of seismic upgrading required for historic buildings. These guidelines represent a minimum standard and should be used with judgement. The degree of upgrading will be determined by the occupancy risk and the extent of the alterations or improvements as defined by the Table of Conformance (Fig. 5.1) The objective of the requirement is to provide a reasonable degree of improvement in the seismic resistance of historic buildings for both property preservation and life safety reasons Usually there is a practical limit to the degree of seismic upgrading which is possible. In some cases nominal upgrading can be achieved at a reasonable cost and should be considered irrespective of the degree of other changes contemplated.

Under the B.C. Building Code post-disaster buidings, such as police stations, hospitals, disaster coordination centres and schools have higher requirements for seismic resistance and the structural engineer should refer to Part 4 of the B.C. Building Code for additional information. Post-disaster structures are not covered by the Supplement except for non-seismic work.

Historic buildings will be categorized as Category 1, 2 or 3 based on height, area and occupancy and shall be upgraded to the degree outlined in Fig. 5.2 Seismic Upgrading Requirements. For cases where one storey is added, the building height is the final height including the new storey.

Category 1 — 1 and 2 storey buildings less than or equal to 600 m2 in area and not containing a Group A* or B occupancy above or below the first storey.

Category 2 — A 3 or 4 storey building not containing a Group A or B Occupancy above the 3rd. floor, 1 or 2 storey building >600 m2 or 1 or 2 storey building containing a Group A* or B occupancy above or below the first storey.

Category 3 — A building 5 storeys and above or containing a Group A** or B ccupancy above the 3rd. floor.

* For a Group A Occupancy unless shown to have an occupant load of < 100 persons.

** Unless shown to have a combined occupant load < 100 persons.

Category of Seismic Risk	Extent of Seismic Upgrading Required as % Current Code		
	Extent of Building Improvements (See Appendix 2)		
	Minor	Moderate	Major
Category 1	None	None *	Nominal
Category 2	None *	25-50 % **	50-75 % ***
Category 3	Nominal	25-50 % **	75 %

* Nominal improvements advisable but not mandatory.

** Higher figure applies except that the maximum higher figure may be reduced by the following formula when seismic upgrading costs exceed 25 % of the building improvements.
X% = 50 %-1/3 (cost of seismic upgrading in excess of 25 % of TOTAL project cost, expressed as a percentage of TOTAL project cost) where x is the % of seismic upgrading required.

*** Higher figure applies except that the maximum higher figure may be reduced by the following formula when seismic upgrading costs exceed 50 % of the cost of building improvements.
x% = 75 %-1/3 (cost of seismic upgrading in excess of 50 % of TOTAL project cost, expressed as a percentage of TOTAL project cost) where x is the % of seismic upgrading required.

Note 1: Where a % of current code requirements for seismic upgrading is required by the above table, the percentage shall include at a minimum all nominal work plus the stated % of Code compliance This shall mean the % of forces required by Part 4 of the B.C. Building Code.

Note 2: Nominal upgrading is to consist of, but not be limited to, the following:

1. The introduction of new lateral load resisting elements where none exists in the existing structure. New walls, braces, or frames should be introduced into buildings which have no structural lateral load resisting element in one or more directions. An example of this might be a two storey timber structure with parallel brick fire walls at each end of the building, but no walls or any other lateral load resisting element in a direction perpendicular to the fire walls.
2. Tieing the structural elements of the building together where no adequate ties exist. For example, floor and roof diaphrams should be tied to walls and conversely walls should be tied to diaphrams for lateral support. Also, columns and beams should be tied together where no significant ties occur, such as may be the case of some forms of post and beam construction.
3 Obvious unsafe conditions should be corrected. For example, damaged or badly deteriorated structural elements should be repaired. Also, unreinforced masonry parapets, cornices and chimneys and other hazards should be reinforced or adequately braced.
4. The addition of secondary support columns to support floor areas supported by unreinforced masonry walls.

Proposal # 234

Delete Sentence 9.25.1.1.(1) and **substitute** as follows:

(1) Except as provided in Sentences (2) to (3) this Section applies to thermal insulation and measures to control condensation for all *buildings* intended for use on a continuing basis during the winter months

(2) *Buildings* classified as Group C *major occupancies*, used as motels or hotels, and having a *conditioned floor area* exceeding 500 m2 shall conform to Sections 5.2., 5.3. and Part 6.

(3) *Buildings* classified as Groups D, E, and F 2 and 3 *major occupancies* and having a *conditioned floor area* exceeding 500 m2 shall conform to Sections 5.2., 5.3. and Part 6.
(See Appendix A)

Re-number existing Sentence (2) to (4)

Delete - Article 9.25.2.1. and **substitute** as follows:-

9.25.2.1. Required Insulation

(1) All walls, ceilings and floors separating heated space from unheated space, the exterior air or the exterior soil shall be provided with thermal insulation in accordance with Table 9.25.2.A. (See Appendix A.)

(2) Radiant heated floors over heated crawl spaces shall be insulated with minimum 2.1 RSI (R 12) insulation.

Table 9.25.2.A.
Forming Part of Sentence 9.25.2.1.(1)

Minimum Thermal Resistance of Insulation RSI, $m^2.^oC/W$ (1)
(R-value, hr.sq.ft.^{o}F/Btu) for Buildings

Building Assembly	Maximum Number of Celsius Degree Days			
	up to 3500	4500	5500	above 5500
Framed walls (other than foundation walls)	3.0 (17)	3.3 (19)	3.3 (19)	3.3 (19)
Concrete/masonry walls (other than foundation walls)	2.1 (12)	2.1 (12)	2.1 (12)	2.6 (15)
Framed roof assemblies with attic space	4.2 (24)	4.9 (28)	5.3 (30)	7.0 (40)
Cathedral ceilings/framed flat roof assemblies	4.2 (24)	4.9 (28)	4.9 (28)	4.9 (28)
Concrete roof assemblies	3.5 (20)	3.5 (20)	3.5 (20)	3.5 (20)
Framed floor assemblies separating heated space from unheated space or the exterior	4.2 (24)	4.9 (28)	4.9 (28)	4.9 (28)
Foundation wall assemblies:-				
Concrete or masonry	1.8 (10)	1.8 (10)	2.1 (12)	2.6 (15)
Framed	3.5 (20)	3.5 (20)	3.5 (20)	3.5 (20)
Concrete floor slab edges (2)	1.8 (10)	2.1 (12)	2.1 (12)	2.6 (15)
Column 1	2	3	4	5

(1) Thermal bridging at framing is ignored
(2) See Sentence 9.25.4.5.(4)

Delete Article 9.25.4.4. and **substitute** as follows:-

9.25.4.4. Insulation in Crawl Spaces.

(1) Heated crawl space walls shall be insulated in accordance with Table 9.25.2.A.

(2) Insulation applied to the external face of the wall shall extend to the top of the footing or 500 mm below finished ground level, whichever is the higher level.

(3) Except as required in Sentence (4) insulation installed on the interior of the wall shall extend to the top of the footing or to 500 mm below the level of the crawl space, whichever is the higher level.

(4) If the insulation on the interior of the wall is of a type that may be damaged by water the insulation shall be applied so that there is not less than 50 mm clearance above the crawl space floor.

(5) Where the exposed portion of the crawl space wall exceeds an average of 600 mm above ground level the wall shall be insulated to foundation wall values.
(See Appendix A)

Delete - Article 9.25.4.5. and **substitute** as follows :

9.25.4.5. Insulation Around and Under Slabs-on-Grade.

(1) Insulation around and under slabs-on-grade shall be located so that heat from the building is not restricted from reaching the ground beneath the perimeter, where exterior walls are not supported by footings extending below frost level.

(2) Insulation applied to the external face of the perimeter wall shall extend to the top of the footing or 500 mm below the finished ground level, whichever is the higher level.

(3) Except as permitted in Sentence (4) insulation installed on the interior of the wall shall extend to the top of the footing or 500 mm below the underside of the slab-on grade, whichever is the higher level.

(4) Where perimeter slab-on-grade insulation is installed in accordance with Table 9.25.2.A it shall extend a minimum of 500 mm from the inside face of external walls, interior wall insulation may terminate at this level.

(5) Where heating ducts are installed in or beneath slabs-on-grade, minimum 1.8 RSI (R-10) insulation shall be installed below the slab or duct, this insulation shall extend a minimum of 500 mm on either side of the ducts.

(6) Where the slab-on grade contains a radiant heating system, insulation shall be installed beneath the slab or entire system to a minimum level of .9 RSI (R-5).
(See Appendix A)

Appendix

Add Sentences as follows:

A-9.25.1.1.(2) & (3) These sentences cover two exceptions to thermal insulation measures in buildings that would normally be included under Part 9 requirements. Due to nature of the energy usage of these building types it would be technically penalizing to apply Part 9 requirements instead of the Part 6 ASHRAE requirements. The use of 500 m2 of heated or cooled floor area as the limiting factor is a result of energy analysis of these types of occupancy.

A-9.25.2.1.(1) Insulation values other than those required by Table 9.25.2.A. will be permitted provided it is established that the total building design heat loss will not be higher than if designed to this Table and taking into consideration fuel and equipment to be installed.

In order to accommodate high levels of insulation in an attic it is sometimes necessary to modify roof or rafter framing. While such modifications are generally simple and inexpensive, standard roof framing procedures can be used and thickness of attic insulation reduced at the roof perimeter provided:-

a) the insulation reaches its full required thermal resistance value within 1 m of the exterior wall face, and

b) the thermal resistance of the attic insulation within this 1 m is not reduced below the required value of the exterior wall insulation. Attic insulation should extend over the top plate to the outside wall face.

Proposal # 289

Delete Table 3.1.8.B. and **substitute** as follows:

Table 3.1.8.B.
Forming Part of Articles 3.1.8.15. and 3.1.8.16.

Location	Minimum Required Fire- Protection Rating of Door	Maximum Temperature Rise on Unexposed Side of Door, oC	Maximum Area of Glass in Door, cm2	Maximum Aggregate Area of Wired Glass Panels and Glass Block not in Door , cm2
Between an *exit* enclosure and the remainder of the *floor area* in *buildings* not more than 3 *storeys* in *building height* or between a dead-end corridor and an adjacent occupancy where the corridor provides the only *access to exit* and is required to have a *fire-resistance rating* of not more than 45 min	All ratings	No limit	8000	8000
Between an *exit* enclosure and the remainder of the *floor area* or between a dead-end corridor and an adjacent occupancy where the corridor provides the only *access to exit* and is required to have a *fire-resistance rating* of more than 45 min (except as permitted above)	45 min	250 after 30 min	645	645
	1.5 h	250 after 1 h	645	645
	2 h	250 after 1 h	645	645
in a *firewall*	1.5 h	250 after 30 min	645	0
	3 h	250 after 1 h	0	0
Column 1	2	3	4	5

British Columbia Building Code 1990
Code Change Challenge / Amendment

Please print or type:-

Original Proposal
Reference Number : _____

Full text of proposed Amendment

N.B. All Challenges / Amendments must be justified or technically substantiated.

Reason / Justification for Challenge OR
Reason & Technical Sustantiation for Amendment

Attach additional sheet(s) if required

Submitted by:- Name: _____ **Street:** _____

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Challenge/ Amendment ref.number . .00

Please Submit Before April 8, 1991